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THE
AMERICAN JOURNAL
OF THE
MEDICAL SCIENCES.

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THE
AMERICAN JOURNAL
OF THE
MEDICAL SCIENCES.

VOL. XX.

PHILADELPHIA:
CAREY, LEA & BLANCHARD.
E. G. Dorsey, Printer.
1837.

TO READERS AND CORRESPONDENTS.

Various articles, intended for this number, have been excluded to make room for copious accounts of the Influenza—the prominent topic of interest.

The following works have been received:—Anatomical, Pathological and Therapeutical Researches upon the Disease known under the names of Gastro-Enterite, Putrid, Adynamic, Ataxic, or Typhoid Fever, &c., compared with the most common acute diseases. By CH. A. LOUIS, M. D. P.; &c. &c. Translated from the original French by HENRY J. BOWDITCH, M. D., Fellow of the Massachusetts Medical Society, and Member of the Society for Medical Observation at Paris. Boston, 1836: 2 vols. 8vo. (From the translator.)

An Essay on the origin and nature of Tuberculous and Cancerous Diseases. Read before the Medical Section of the British Association, on the 23d of August, 1836. By RICHARD CARMICHAEL, M. R. I. A., Corresponding Member of the Royal Acad. of Med. of France, &c. Dublin, 1836. (From the author.)

Recherches Pratiques sur la Thérapeutique de la Syphilis ouvrage fondé sur des observations recueillies dans le service et sous les yeux de M. CULLERIER, Chirurgien en Chef de l'Hopital des Vénériens, Par LUCAS-CHAMPIONNIÈRE, D. M. Paris, 1836. (From the author.)

Plates of the Cerebro-Spinal Nerves, with references, for the use of medical students. By PAUL B. GODDARD, M. D., Prosector of Anatomy in the University of Pennsylvania, Member of the Academy of Natural Sciences, &c. Philadelphia: J. G. AUNER, 1837. (From the publisher.)

Oration on the Guidance of a sound Philosophical Spirit in the investigations of Medical Science. Read before the Cincinnati Medical Society, January 4, 1837. By JOHN P. HARRISON, M. D., Professor of Materia Medica in the Medical Department of the Cincinnati College. Printed by order of the Society. Cincinnati, 1837. (From the author.)

A Treatise on the Functional and Organic Diseases of the Uterus; from the French of F. DUPARCQUE, M. D. P., &c. &c. Translated, with notes, by JOSEPH WARRINGTON, M. D. Philadelphia, 1837. (From the translator.)

Facts and Cases in Obstetric Medicine, with observations on some of the most important diseases incidental to females. By J. T. INGLEBY, Member of the Royal College of Surgeons, London; Lecturer on Midwifery at the Royal School of Medicine, Birmingham, &c. &c. Longman & Co., London. (From the author.)

Illustrations of Pulmonary Consumption; its anatomical characters, causes, symptoms and treatment. To which are added some remarks on the climate of the United States, the West Indies, &c.; with thirteen plates, drawn and coloured from nature: (Second edition.) By SAMUEL GEORGE MORTON, M. D., late Physician to the Philadelphia Almshouse Infirmary, &c. &c. Philadelphia: Edw. C. Biddle, 1837. (From the author.)

Periódico de la Academia de Medecina de Megico, Vol. I., Nos. 1 to 8 inclusive, July, 1836, to February, 1837. (From Dr. Luis Blaquiére.)

Twentieth Annual Report on the state of the Asylum for the relief of persons deprived of the use of their Reason. Philadelphia, 1837. (From Drs. Evans and Porter.)

Report to the Legislature on the state of the New York Hospital and Bloomingdale Asylum, for the year 1836. New York, 1837: 8vo. (From Dr. Macdonald.)

The Annals of Electricity, Magnetism and Chemistry, and Guardian of Ex-

perimental Science; conducted by WM. STURGEON, Lecturer on Experimental Philosophy, &c. London, Oct. 1836, No. 1. (From the editor.)

A Dictionary of Practical Medicine, comprising general pathology, the nature and treatment of diseases, morbid structures, and the disorders especially incidental to climates, to the sex, and the different epochs of life; with numerous prescriptions for the medicines recommended; a classification of diseases according to pathological principles; a copious bibliography, with references, and an appendix of approved formulæ; the whole forming a library of pathology and practical medicine, and a digest of medical literature. By JAMES COPLAND, M. D., &c. &c. Part III. Boston: WILLIAM D. TICKNOR, 1837. (From the publisher.)

Address delivered before the Medical Society of the State of New York, Feb. 8th, 1837. By JAMES M'NAUGHTON, M. D., President of the Society. Albany, 1837. (From the author.)

Geology and Mineralogy considered with reference to Natural Theology. By the Rev. WILLIAM BACKLAND, D. D., canon of Christ Church, and reader in geology and mineralogy in the University of Oxford. William Pickering, London, 1836. (From the author.)

An examination of Phrenology, in two Lectures, delivered to the students of the Columbian College, District of Columbia, February, 1837. By THOMAS SEWALL, M. D., Professor of Anatomy and Physiology. Published by request; with 8 plates. Washington City, 1837. (From the author.)

Gazette Médicale de Paris, October, November and December, 1836. (In exchange.)

Journal Hebdomadaire des Progres des Sciences Médicales, October, November and December, 1836. (In exchange.)

Journal de Pharmacie, October, November and December, 1836. (In exchange.)

Journal de Médecine et de Chirurgie Pratiques, October, November and December, 1836. (In exchange.)

Journal des Connaissances Medico-Chirurgicales, November and December, 1836. (In exchange.)

The Dublin Journal of Medical Science, including the latest discoveries in Medicine, Surgery, and the Collateral Sciences, for November, 1836, January and March, 1837. (In exchange.)

The Boston Medical and Surgical Journal, Vol. XVI., No. 1 to 12. (In exchange.)

The Select Medical Library and Journal of Medicine, February, March and April, 1837. (In exchange.)

The Western Journal of the Medical and Physical Sciences, January, 1837. (In exchange.)

The Southern Medical and Surgical Journal, July and December, 1836 and January, February and March, 1837. (In exchange.)

The Transylvania Journal, for October, November and December, 1836. (In exchange.)

The case of aneurism of the external Iliac artery recorded in our last No., was extracted from the Boston Med. and Surg. Journal. By the oversight of our printer, due credit was not given to that Journal for it.

Papers intended for publication should be sent, *free of expense*, as early after the appearance of the Journal as possible, in order to be in time for the ensuing number. Such communications should be addressed to "CAREY, LEA & BLANCHARD, Philadelphia, for the *Editor of the American Journal of the Medical Sciences*." All letters on the *business* of the Journal to be addressed exclusively to the publishers.

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That the Administration of Internal Stimulants, with the View of hastening the Delivery of the Child, is unnecessary, useless, and in the healthy female, injurious. Demonstrated by Dr. Johann Christ. Gottf. Jörg, Professor of Midwifery in the University of Leipzig, &c. &c. - - -	176
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THE
AMERICAN JOURNAL
OF THE
MEDICAL SCIENCES.

ART. I. *A case of Aneurism of either the Ischiatic or Gluteal Artery, in which the right internal iliac artery was successfully tied.* By VALENTINE MOTT, M. D., Professor of Operative Surgery and Pathol. Anat. in the College of Physicians and Surgeons in the city of New York.

Dear Sir:—Previous to Dr. Mott's departure hence for Europe in September last, he charged me to prepare for publication, in the journal under your superintendence, the history of his operation upon the internal iliac artery, for an aneurism of either the gluteal or ischiatic artery. The papers containing this brief report have just been handed to me, and I hasten to transmit it to you, and beg you to allow it a place in your pages. The operation of ligature of the internal iliac artery has been once before performed in this country, by Dr. S. P. White, then of Hudson, New York, and now a resident of this city, and also with success. The operation, you will observe, was achieved on the 29th December, 1834, and Dr. Mott sailed for England in the February following, and was absent for seventeen months, which will account for the length of time which has elapsed between the performance and the publication. But during this interval, after his recovery, the patient lived as a domestic in the family of the Doctor, and has only just quitted it to become coachman to a gentleman of this city, being now, nearly two years afterwards, in perfect health; a sufficient evidence of the perfect success of the operation.

With much respect, &c.

To Dr. Isaac Hays.

WM. C. ROBERTS, M. D.

No. XXXIX.—MAY, 1837.

CASE.—*History*. Richard Charlton, the patient, is a coloured man, born in this city, and about 38 years of age. He has worked in a grocery store. He first felt the symptoms of his disease in the summer season of 1832;—during the cholera then prevalent he had a diarrhœa, and while making frequent straining at stool, perceived a swelling and pulsation in the right buttock, which has gradually increased until this time. It is now about the size of a goose egg, and contained only fluid blood.

On the 29th December, 1834, at noon, I proceeded to tie the right internal iliac artery, in the presence of Drs. I. Kearney Rodgers and A. E. Hosack, and assisted by Drs. Vaché and Wilkes. The incision, which was fully five inches long, extended from a spot on a line with the umbilicus, about midway between the linea alba and the anterior superior spinous process of the ilium, to within half an inch of Poupart's ligament, and then curved forward an inch over the course of the spermatic chord. The operation lasted about 45 minutes, owing to the almost irrestrainable intractability and frantic restlessness of the patient. His great straining and jactitation caused me to make a small opening in the peritoneum, whilst separating it from the iliacus internus muscle. The peritoneum and intestines being drawn up and supported by a large curved spatula, the internal iliac artery was readily seen, crossed by the ureter, which was easily pushed aside. The filamentous tissue was quickly separated by the fingers from about the vessel, and the ligature conveyed under it by the American needle. At the moment of tightening the knot the hand was applied to the tumour, in which all pulsation immediately ceased, and which itself almost entirely disappeared directly after. The patient, being put to bed, took twenty drops of a solution of morphine, and in the evening was easy.

December 30. Had a good night's rest, and was comfortable in the morning. Some excitement coming on early in the afternoon, he was bled from the arm to about $\frac{1}{2}$ xvij., and took a solution of sulph. magnes. in divided doses. *Evening*—Much easier; salts had not operated. Directed an enema, and applied a strip of blister plaster around the wound.

31st. Has had a good night; is doing well; is free from pain, and the pulse is tranquil; enema operated several times, and the plaster drew well. In the evening he was still better than in the morning.

January 1st, 1835. Feels much more easy than he did yesterday, and can move better—the abdomen is less tumid. Pulse not more frequent, but rather quicker than it was yesterday. Since the enema

was administered has had frequent teasing stools. Ordered enema ex. opio. c. amylum. Cold water and barley tea for drink.

2nd. Anodyne enema quieted the bowels. Pulse, though still frequent, soft and compressible; tension and tenderness of abdomen gone.

3d. Freedom from tenderness continues; pulse nearly natural. Reapplied the blister and allowed panada and arrow-root.

4th. Much depressed by the intense cold of to-day, (10° below 0 of Fahr.)

5th. Pulse natural; tongue nearly clean; is cheerful and hungry.

7th. No unpleasant symptom whatever.

9th. Removed the sutures from the wound, which is very much closed. Is free from pain; pulse natural and bowels regular.

The report of the case terminates here; and owing to the absence of Dr. A. E. Hosack, upon whom the case of the patient devolved, I am only enabled further to state that the ligature came away on the 42nd day.

New York, Nov. 26, 1836.

ART. II. *Case of Congenital Enlargement of the Tongue.* By THOMAS HARRIS, M. D., Surgeon of the United States' Naval Asylum, and one of the Surgeons of the Pennsylvania Hospital. (With a plate.)

R. K., aged nineteen years, a native and resident of Tennessee, consulted me in May, 1835, in relation to a congenital enlargement of his tongue. An elder brother, who accompanied him, detailed to me the following history of his case. At birth his tongue was enlarged and slightly protruded without the maxillary bones, so as materially to interfere with the process of suction. When about a month old, the tongue greatly increased in size, and so far projected from his mouth as to produce considerable deformity; but I could not learn whether or not symptoms of inflammation existed in the organ. It increased with the growth of the body until it acquired a magnitude inconvenient to the patient, and an appearance highly offensive to the sight.

When I first examined the case, the tongue projected beyond the upper incisors three inches—circumference six inches—vertical thickness one inch and a half. The tongue exhibited a violet colour; was of a hard and incompressible consistence, covered with a dark slimy

secretion, and that portion of it without the mouth was much larger in volume than that within. The weight of the tongue pressing continually on the inferior incisor and canine teeth, gave them a horizontal direction forwards; and at the same time drew the os hyoides and larynx upwards and forwards.

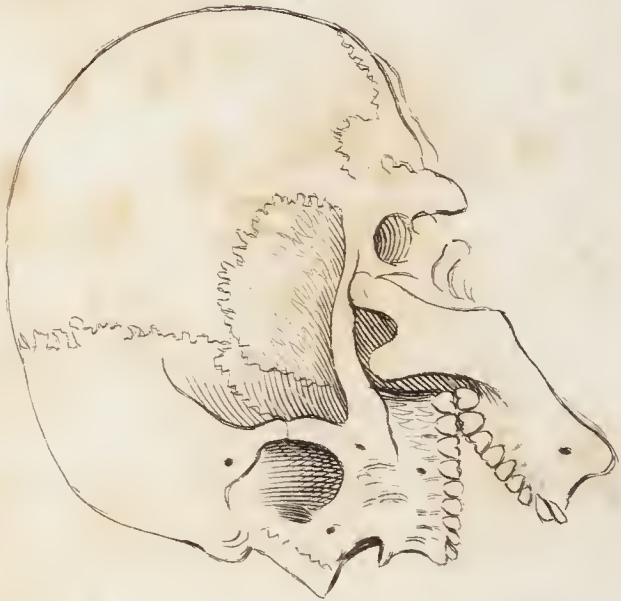
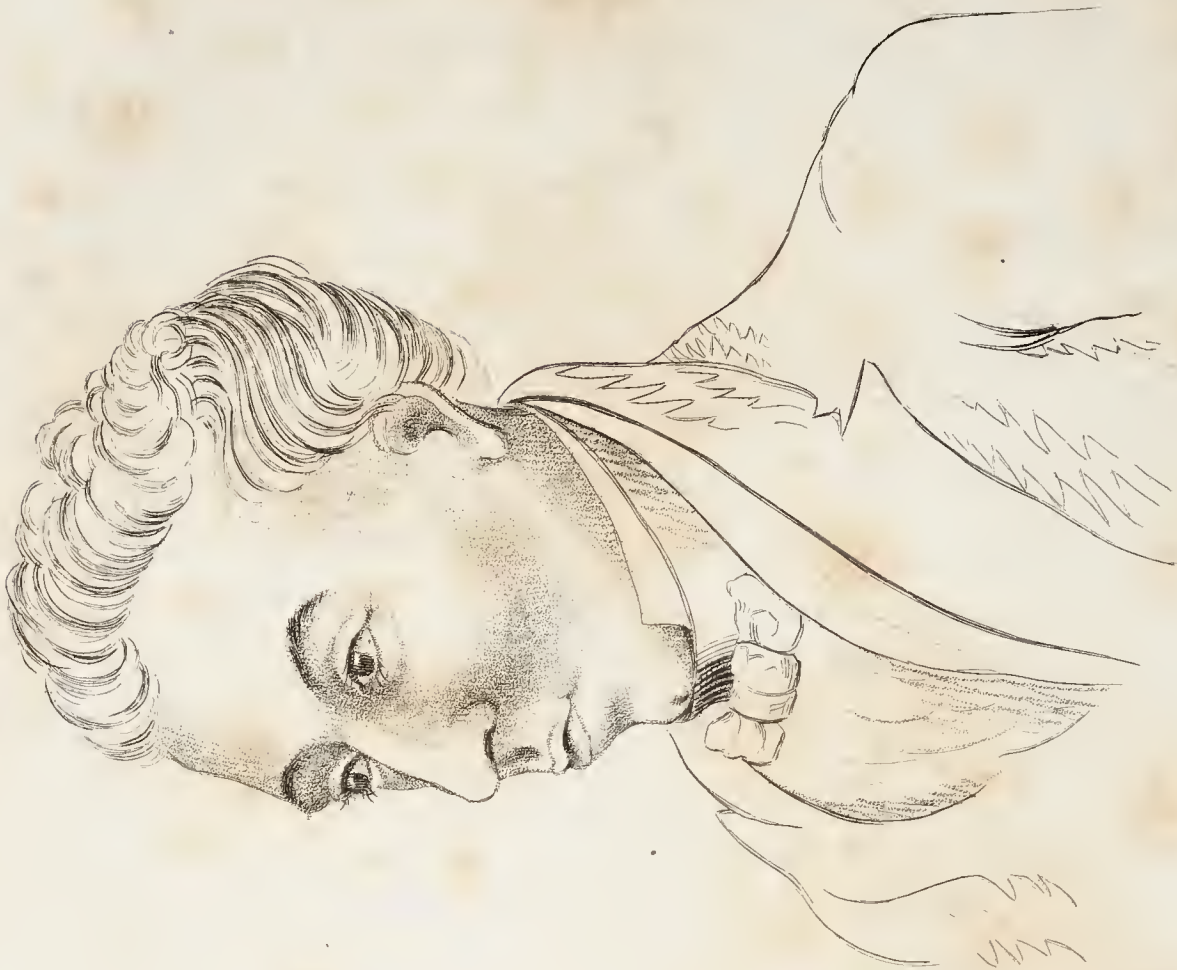
On examining the inferior maxilla, the rami was found much shorter than natural; half an inch at least less in length than that of his brother, who in all other respects was of the same size. The angle of the jaw was unusually obtuse, and the molar teeth were rather longer than natural. By these alterations in the conformation of the parts, the patient had so far overcome the inconvenience arising from his projecting tongue, that the molars could be readily brought in contact, and thus the process of mastication could be performed, and deglutition effected almost as well as if no deformity existed. He was obliged, it is true, to cut his food in small pieces, and introduce it at the side of his mouth.

Except during the act of eating, the saliva ran constantly from his mouth, to catch which, and to conceal the deformity, he was obliged to wear a silk handkerchief over his mouth and around his neck.

I decided to perform the operation, but as the patient was somewhat feverish, arising from his long journey and the heat of the weather, it was postponed for a week. As the inferior incisor teeth could not be restored to their natural position, I deemed it prudent to immediately extract them. In the presence of Drs. Horner, Barton, Randolph, Butler, and several medical students, the operation was performed on the 26th of May. I first elevated the tongue, and dissected it from the floor of the mouth, about three-fourths of an inch behind the anterior part of the jaw, and then introduced a strong straight bistoury, commencing where the first incision terminated, and pushed it through the organ between the median line and the left raninal artery, and drew it forward and laterally, so as to form the left flap, terminating at a point corresponding with the teeth. After the divided artery was secured by a ligature, the bistoury was again introduced in a corresponding position on the right side, by which the opposing flap was made; the artery was secured, and then the intervening space was divided by strong scissors. The cut in the tongue resembled in form the letter V inverted. In performing the operation in this manner, I had perfect command of the tongue until after the blood-vessels were tied. The flaps were now approximated, and maintained in this state by means of three interrupted sutures.

A pointed well formed tongue was thus made, and of the ordinary length. After the operation the patient complained of a burning, ex-





Harris' case of Hypertrophy of the tongue.

cruciating pain in the tongue; and this organ exhibited a tumid and livid aspect, which threatened gangrene. By abstracting a few ounces of blood from under the chin, and by the topical application of kreosote these symptoms were relieved. On the fourth day the ligatures were removed, and on the fourteenth the wound was entirely healed.

In consequence of the shortness of the rami of the jaw, and the alterations of its angles, the incisor teeth were separated an inch and a quarter, while the molars were in contact. In order to facilitate the approximation of the anterior part of the maxillary bones, several of the molar teeth were drawn out, which overcome nearly one half the separation, and at the expiration of two months, by means of pressure, the distance was reduced to less than half an inch.

This case forms another interesting example of the power of nature in accommodating parts of the body to new circumstances. Though the restoration of the jaw to its natural position, was no doubt hastened by pressure, still I believe that it would have been affected, in time, without such assistance. It is well known that spontaneous alterations take place in the angles of the jaw, in *all individuals*, at different periods of life. For example, during infancy, before the teeth make their appearance, and in after life, when from disease or old age they are lost, the angles are very obtuse; but while the dental line remains perfect, they are rectangular. So that nothing more extraordinary has occurred in the patient, whose case I have detailed, than is observed in every individual before and after shedding the teeth.

I received a letter from my patient dated August, 1836, more than a year after the operation, in which he states, that his jaws are nearly closed—all deformity is removed—that he articulates distinctly—is in excellent health and spirits, and then engaged in his studies in college.

This case is similar in all respects to that of Margaret Lawson, which I published in the year 1829 in the seventh volume of the American Journal of the Medical Sciences; except that this one was congenital, and the former commenced at four years of age.

The plate exhibits the peculiar position of the lower jaw, as well as the appearance of the patient before and after the operation.

Notwithstanding the rarity of this disease, Baron Percy, in an article in the *Dictionnaire des Sciences Médicales*, vol. xxvii. p. 244, has noticed, and collected twelve cases. In doing so, he has embraced the records of all countries, and a period of upwards of sixteen hundred years.

The first case recorded is by Galen, who flourished in the second century. He saw the case in Pergamus.

Scaliger reports a case which he examined in Agen in France in the year 1570.

Donat describes a case which he saw in Mantua.

Bartholin saw a case in Copenhagen in 1680.

John Valæus saw another in Copenhagen sometime before, which he describes as being "as large as his arm."

Bardet, Maurant, and Trioen each record one, but the writer fails to notice the period of their occurrence.

Baron Percy published two cases, one of which he saw at Petersbach, department of the lower Rhine; the other at Offenbourg.

Mirault reports a case, about which he was consulted at Huism, department of the Loire.

Sorbait and Rey have each published a case.

Of these twelve cases, four were successfully operated on by Bartholin, Verœus, Percy, and Mirault; the remaining eight were abandoned to their fate.

I am aware that there are recorded many recent cases of great enlargement of the tongue, but unaccompanied by any alteration in the configuration of the inferior maxillary bone. Lassus and others mention such cases, which they were enabled to cure by local bleeding and pressure. In the cases, however, which are above described, such remedies would be of no avail, as the monstrous tongue could not be forced into the mouth as they propose; nor could the altered angle be remedied while the huge mass was permitted to counteract the salutary efforts of nature.

Philadelphia, February, 1837.

ART. III. *An Analysis of some of the modes for effecting extension and counter-extension in Fractures of the Lower Extremities, with observations on the materials most proper for the formation of bands.* By REYNELL COATES, M. D.

There is scarcely any surgical accidents which have called forth the exercise of so much mechanical talent in the construction of machines for their treatment, as fractures of the thigh and those of the leg, when they require continued extension of the limb. Hardly a month passes unmarked by the proposition of some apparatus or modification of machinery, supposed to be novel in its character, and the claims of many of these contrivances are upheld by more or less practical experience. Two or three cases, perhaps, have been actually cured

by some one of the methods described. The limbs are alleged to be of the proper length, no ulceration or excoriation has occurred during the treatment, and the patient walks with a firm step or without any apparent lameness. It may well be asked what more can be required to substantiate the merits of any apparatus? Certainly, if we grant that due care has been exercised in the measurement of the limbs, enough is proved in the premises to show that occasional cases have terminated in a highly satisfactory manner under the plan of treatment advocated, but the weight of the evidence goes no farther. A single unsuccessful case may indisputably establish either the imperfection of the apparatus employed or of the practitioner employing it, but many observations are required to prove the general applicability of any machine.

I propose, then, to inquire into the physiological and mechanical action of certain parts of the apparatus for fractures of the lower extremities, to point out the just bearing of certain well known rules for the management of extension, as laid down by surgical writers generally who have not in all instances practised their own precepts, to separate what is absolutely essential from what is merely collaterally useful or positively injurious in the machinery, and to offer a few remarks on the best material for splints, and extending and counter-extending bands.

We will confine ourselves as strictly as possible to the single question of mechanical extension, as employed in fractures of the shafts of the bones, attended with or liable to shortening of the limbs by muscular action, for it would be impossible to discuss within reasonable limits the necessary modifications of mechanical treatment requisite in cases of fracture about the joints of the hip, knee, or ankle.

I shall dwell chiefly upon the plans of treatment with the limb in the extended position, these being almost universally employed in American practice.

Firstly; then; what is the nature of the resistance to be overcome by mechanical extension in the treatment of fractures?

If the accident be accompanied by a severe shock, and a collapse of the vital powers, there will be scarcely any displacement of the fragments other than what may result from the direct action of the fracturing force, from changes in the position of the patient, or from the weight of the member. The muscles are then passive; and if the limb, as well as the body, be laid straight on a horizontal surface, the limb will appear of the natural length, even in cases of very oblique fracture of the os femoris. If a firm, unyielding, and convenient apparatus should now be so applied as to secure the foot and the pelvis in

the right relative position, no shortening can afterwards take place, and the case may result in a perfect cure without the employment of any extending force, properly so called. I have seen this result in one instance, and the reason why it has not been more frequently observed has been, because part of the apparatus used in other cases was always composed of materials more or less extensible. But the accidents which produce fractures are but seldom so severe as to throw the patient into collapse; and, unless the case be mortal, even when this effect is witnessed, reaction often follows in a few minutes, and almost always within twenty-four or thirty-six hours. We therefore seldom see a fractured thigh of the full length before the application of the dressings; and when it is so, the advantage must be promptly seized, or the opportunity is lost. The muscles commence contracting immediately or very soon after the occurrence of the accident, and more or less shortening of the limb results; still, if within two or three hours after the injury is inflicted or the reaction established the surgeon should apply steady extension for a few minutes, so as to exhaust the muscles a little, the limb is brought to its full length at once, and all that is afterwards required is to secure it against another retraction—not by an extending, but by a simple retaining band. The force required for this purpose, under any ordinary circumstances, is precisely equal to the tonic contraction of the muscles in health, which is always very slight, and during sleep or when the mind is strongly engaged, scarcely perceptible. It is folly, then, to apply an instrument which shall continue uninterrupted and equal extension at all times, at the risk of all the inconveniences frequently resulting therefrom, after we have gained our purpose in the fullest extent, by restoring the limb to its natural length. I once met with *rather too much success* in treating a fracture of the thigh. The patient left the hospital *with the injured limb perceptibly longer than the sound one!*

Though the retentive force necessary to resist the tonic contraction of the muscles is neither uniform, constant, nor severe, yet the extending band, or any other contrivance which may be substituted for this essential part of the dressings cannot be made weak with impunity, for it is called upon to resist occasional forces of vastly greater power. The voluntary and spasmodic contractions of the muscles of the thigh, and the cramps in the gastrocnemii muscles, to which some persons are extremely liable, must not be permitted to disturb the position of the fragments if such an accident can possibly be prevented. I have seen the strong tapes of my own extending band snapped off by a spasm in a case of fractured thigh, with a threatening of tetanus.

Such severe attacks are extremely rare, and are more readily repressed by strong opiates than by any mechanical measures; but the voluntary contractions can be and should be controlled by the apparatus, or the ends of the fragments will continually irritate the surrounding parts by their irregular motions, and perhaps superadd the evil of spasmodic muscular action. This control cannot be obtained by any constant extending force, such as a spring, a weight, or an elastic band; for the continual pressure of such a force, when adequate in intensity to the purpose in view, cannot be tolerated by human integuments: hence much of the complaint urged against permanent extension by those who have witnessed severe ulcerations and sloughs produced by the bands.

In proof of the practical importance of words in surgery, it may be mentioned that the term permanent extension strictly refers only to the position of the limb, but it is apparently associated in the minds both of authors and students with the idea of a permanent extending force! The very name of "extending band" given to an important part of the apparatus is an error in terms, and has exerted a very prejudicial influence upon the treatment of the class of accidents under our notice. If the band in question can be used with propriety as an active agent in extending the limb at any time, it must be during the first few days of the treatment; for when the limb is once brought to its full length, any further extension would be a positive evil. The band is really *a retaining band*, and the proper extension should be made *by the hands of the surgeon*. As an additional instance of the abuse of words by surgical writers, I will allude in passing to the well known law that "extension and counter-extension should always be made *in the same direction*." The meaning is obvious, but this is certainly a very awkward way of expressing the real intention, namely, that these forces should act *in precisely opposite directions*. But this is a digression.

When several days have elapsed before the treatment of a fracture with shortening, is commenced, the nature of the force to be overcome is changed—it is no longer the mere tonic contraction of the muscles. It is well known to every surgeon that in a luxation, when the distance between the origin and insertion of a muscle is lessened, it contracts, and in a few weeks becomes completely accustomed to its new position; it then requires an enormous force to restore the muscle to its original length. Now there is no essential difference of condition between muscles shortened in luxations and those which have remained contracted for many days in fractures, except that, in the latter, the evil never becomes unconquerable until the fragments are

so far united as to destroy all hope, and consequently all desire to attempt reduction. To conquer this permanent retraction suddenly is impossible; and therefore the law is laid down that in reducing luxations we should act slowly, gradually, and without violence. In practice we employ, for reducing a dislocation of the femur, from five minutes to an hour, or more, in our attempts, according to circumstances. If we fail in accomplishing our purpose within a reasonable time, we quietly and wisely resign the case as incurable. The same law is repeated, and much in the same words, for the management of fractures: but mark the difference in its application to practice! I have been at some pains to discover how long a time is occupied in bringing a fractured thigh to its full length by some of the first surgeons in this country—for the books give their directions on this head in a vague and indefinite manner.

I have been in the habit of bringing a fractured thigh to its full length, by acting *slowly, gradually, and without violence*, in from five minutes to twenty-four hours—once only, in a long neglected case, has there been a necessity for repeated extensions during three days. On the other hand, those whose opinions have been asked have generally named a week, or two weeks, as the required period; and one has gone so far as to lay down the general rule that the limb should be brought to the full length, at farthest, *by the end of the third week*. In this long and tedious mode of operating the muscles enjoy every opportunity of contraction, and of becoming accustomed to their new position. During the very efforts of the surgeon to produce their gradual elongation, they are still accumulating powers of resistance to oppose the last portion of extension, and great force is required to conquer the last half inch of shortening, supposing that this can be accomplished at all. What would be said of the surgeon who should propose to reduce a recent luxation, by means of a slow and gradual force which should bring the bone finally into place at the end of two or three weeks? What better plea can we find for such a mode of proceeding in cases of fracture? It is said that great danger would result from a more energetic practice, in consequence of the irritation which the lacerated muscles must experience from the passage of the rough ends of the fragments over their torn surfaces! In reply to this, let us put a parallel case. A man shall receive a deep punctured wound in a muscular part, from the broken and jagged end of a large splinter which rests in the wound—instead of extracting the splinter immediately, the surgeon shall apply to it an extending apparatus which shall draw it out by the second or third week from the date of the accident, for fear of irritating the muscles by adopting a more

rapid process! I am utterly unable to perceive any essential difference of principle in the two modes of treatment just mentioned. If the latter be ridiculous, the former is not less so! If we wish to relieve the lacerated muscles from irritation, the only rational course is to draw the fragments away as speedily as possible by moderate force, and to place them where nature designed they should be; or if the whole purpose cannot be accomplished, the nearer the approach to a correct position the less the irritation.

But it is said that in bad cases the lacerated muscle may be torn asunder or thrown into spasm by attempts at extension. If the former accident were likely to take place to any considerable extent, the case would require amputation and not a retentive apparatus. If a few fibres only, or a single small muscle were endangered, the accident would be unimportant; for a muscular fibre that would break in being drawn out to its natural length, must be in a condition that would render its temporary preservation a matter of small consequence; moreover, the objection is entirely hypothetical. No instance of such an accident from the rational employment of extension and counter-extension can be found on record. Such a plea is never urged, where the rupture *may* take place,—in old dislocations;—and in fractures, long before the muscles have become so obstinately contracted as they are in the class of accidents just mentioned, the union between the fragments becomes so firm that extension is rendered impossible, and, therefore, is never attempted. Then, as to spasm: this is much more likely to occur when the limb is shortened, than when it is of the natural length; on account of both the direct irritation of the misplaced fragments, and the irregular action of the fibres from the change in the relations between their points of origin and insertion. Again: one of the best means of conquering muscular spasms in cases of fracture, which spasms very often present the characters of cramp, is the full extension of the affected muscles aided by lateral pressure. I have repeatedly removed such attacks, simply by tightening the apparatus; and have seen them renewed again, the moment the bands were relaxed. When such measures fail, it is by attention to the condition of the small intestines,—an irritation of which seems to be a fertile cause of cramps in the extremities,—and by a judicious use of opiates, that we are most certainly enabled to relieve them.

This favourite doctrine, that many days should be occupied in bringing the limb to a proper length, is a very frequent cause of ulceration and sloughing, and explains much of the opprobrium cast upon the treatment with the limb in an extended position. But the evils resulting from this plan of treatment are rendered doubly severe, by

the universal practice of employing the extending band as an active, instead of a passive instrument. The surgeon seizes the tapes, or turns the screw or axle to which the tapes are attached, and proceeds to draw forcibly on the band until the limb yields to the traction. Now, though a vast variety of modifications have been introduced in the construction of extending bands, they are all constructed upon nearly similar principles, and the surfaces necessarily covered by them present but four chief points of support to this part of the apparatus, namely: the front of the instep, the tendo achilles, and the upper parts of the two malleoli. The two first, generally, enduring a much greater portion of the pressure than the two last.

We may enlarge the band to any extent under the form of a gaiter, which may even enclose the whole leg, if the case be a fracture of the thigh; yet, any regular machinist would at once declare that scarce any advantage is gained by this arrangement; and such a person would be a perfectly competent judge, for the problem is an abstract-mechanical one, in which no physiological question becomes involved. Human hands apply themselves with much more precision, and act at much greater mechanical advantage in effecting extension, than the most ingeniously constructed band. Why then employ the latter for any other than its legitimate purpose—retention? The mode of treatment under censure, subjects the parts not only to the pressure required to resist retraction, but, also, to that much more formidable force which is necessary to conquer the habitual contraction of the muscles, when the accident has been neglected for some days. By this means the integuments are always irritated and often contused. What wonder then that sloughs or excoriations should follow! But this is not all. The pain occasioned by the traction of the bands induces loud complaint on the part of the patient, and the surgeon relaxes the tapes to give him temporary relief; the limb immediately commences to contract; in a little time it is found shortened and the bands are tightened again. Thus the parts are subjected to continual alternations of pressure and relaxation, and the same difficulties have to be overcome, again and again, under disadvantages continually increasing. This is a sad picture, but it is drawn from life. Now parts that will bear very considerable pressure when that pressure is constant and uniform, will ulcerate under slighter forces irregularly applied; and the reason of this is obvious. While the pressure continues, the vessels of the part are emptied mechanically; absorption is increased, and nutrition diminished in rapidity—the part is attenuated, and the vessels are at the same time debilitated. Remove the pressure, and instantly the vessels are rendered turgid, the balance

of the circulation is destroyed, and additional irritation is produced. A few such alternations, and inflammation becomes established, or the part is debilitated beyond the power of reaction. Excoriation or sloughing is then the inevitable consequence. If the extending band be made of yielding materials, the apparatus *relaxes itself without the assistance of the surgeon*, who is compelled to tighten it from time to time, and thus unconsciously effects the dreaded result just mentioned. To increase the difficulty still further, it is customary with some very eminent surgeons to introduce a slip of buckskin, spread with adhesive plaster, between the counter-extending band and the perinæum. This plaster has a powerful tendency to produce irritation of the skin. When erysipelas is prevalent, it sometimes proves dangerous even in the treatment of incised wounds, though it is generally removed in such cases at a comparatively early period. When worn for a long time, it sometimes detaches the cuticle, leaving the surface of the true skin in a condition resembling mucous membrane, and difficult to heal; sometimes it blisters, and sometimes produces a pustular eruption. I never saw it used to moderate the pressure of a splint or bandage, without producing excoriation, ulceration, or sloughing.

One word more on the manner of effecting the extension. In all cases treated in the straight position, we employ both an extending and a counter-extending band, or something equivalent thereto. In order to act in accordance with the principles and reasoning contained in the foregoing pages, the apparatus, being applied with the band or other contrivance for counter-extension secured on the perinæum, and the tapes of the extending bands relaxed, the surgeon grasps the foot and ankle with both hands, placing his thigh against that splint by which the counter-extension is effected. He then steadily but firmly draws downward the inferior portion of the member, pressing the end of the splint upward at the same time, until the member resumes, if possible, its natural length, and nearly its natural figure. The tapes of the extending band are now drawn sufficiently tight to cause the band to apply itself accurately to the surface of the limb, and they are then securely tied. The time occupied in the extension varies with the obstinacy of the retraction, and in old cases, five or six minutes may be required for this purpose. When this part of the dressing is completed, the surgeon proceeds to ascertain by actual measurement, whether there still remains any deficiency in the length of the member; and it is well to notice here a few highly important precautions which should always be observed at this stage of the business.

No measurement can be depended upon, unless it extend from the
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superior anterior process of the os ilium, to the lowest point of the malleolus internus or externus, these points being definite and constant. It has been customary with many, to measure from the first named spot, to the lower edge of the patella, or to the tuberosity of the tibia; but neither of these positions can be defined with even tolerable accuracy, for the patella lies embedded in ligamentous matter which obscures its outline, and it would be almost as easy to ascertain by the touch, two corresponding points on the surface of two different spheres, as it would be to determine two similar points on the large rounded surfaces of bone which receive the attachments of the ligaments of the patella. I was once called, somewhat triumphantly, by a gentleman of considerable standing in the profession, to receive ocular demonstration of the complete reduction of a fractured thigh, by an apparatus which, upon mechanical principles, may be pronounced incapable of effecting such a result. On throwing down the bed-clothes, a slight fulness of the front of the thigh convinced me that the limb was shortened. The surgeon proceeded to measure both thighs from the spine of the ilium to the patella, and, demonstrated to his entire satisfaction, that they were both precisely of the same length. As a difference of opinion on this point still existed, the limb was re-measured in the manner prescribed above, when the surgeon confessed to a shortening of *three quarters of an inch*, and directed the apparatus to be changed.

In order to arrive at a dependable result, it is necessary that the tape, or other material, employed in measuring, should be drawn with equal stress when applied to each of the limbs, as it is impossible to obtain for the purpose any flexible tissue which will not stretch a little, and thus cause deception, if carelessly employed.

Before entering upon the next division of the subject, it will be best to recapitulate the positions assumable, if the strictures contained in the foregoing pages be correct. They are as follows:—

1st. Extension should always be made by the hands of the surgeon.

2nd. Bands or other extending or counter-extending apparatus should be made of the most inextensible material, and should be used only for the purpose of retention.

3d. The bands should never be relaxed during the treatment, except under urgent necessity, and the moment when the surgeon wishes to effect additional extension should be chosen for any necessary inspection of the surfaces subjected to pressure.

4th. If the patient be in a state of collapse, and if the limb when laid in the apparatus, be found of the natural length, no extension is required.

The extending band is simply tightened sufficiently to adapt it properly and securely to the limb. But if shortening has taken place, the foot should be slowly, steadily, and gently brought down as far as possible before the tapes are tied, and if a single operation does not suffice, the extension should be repeated every few hours until the limb acquires the requisite length. Twenty-four hours are sufficient for obtaining all the advantage that can be gained in hospital practice; but as physicians in private practice, especially in the country, cannot see their patients so frequently as the resident surgeons of hospitals, forty-eight hours may be required in some cases for the completion of the extension.

5th. The obstacle to the reduction of the fracture growing out of the contraction of the muscles, is never entirely unconquerable; but the chief cause of difficulty from this source, in neglected or ill treated cases, is the habitual adaptation of the muscles to a shortened condition.

6th. The commencement of union between the fragments—often obvious by the end of the second week—does form a barrier to the proper extension of the limb, and that barrier soon becomes insurmountable. Hence, if the surgeon should attempt to delay the completion of the extension until the end of the third week, he would generally find his later efforts useless, and his patient incurably lame.

7th. The causes of frequent excoriation, ulceration or sloughing, during the treatment of fractures of the thigh with the limb in a horizontal position are, chiefly, the employment of improper materials for bands, irregularity in the management of the forces, or improper tardiness in extending the limb. These unfortunate results are by no means chargeable upon the position of the member or the amount of force required to prevent retraction.

With these aphorisms the subject of extension is dismissed for the present, and we may proceed to inquire what measures are required to counteract the deformity which in fractures of the lower extremities often takes place in other directions than that of the axis of the bone. And let it be remembered that fractures in the neighbourhood of the joints are excluded from all notice in this paper—to the treatment of such, many of my remarks would be wholly inapplicable.

There is in all fractures of the leg and thigh a strong tendency to rotation of the lower fragment, which is produced by the weight of the anterior part of the foot. The displacement takes place outwardly or inwardly, according to the position of the plane on which the heel rests. In every apparatus provided with lateral splints this tendency is readily checked by casting a turn of roller round the toes and

securing the ends to one or the other splint, as circumstances require; but this simple plan of proceeding is not satisfactory to many, and a fondness for over legislation has caused the introduction of foot-boards, which often display the exercise of considerable mechanical ingenuity, being so contrived as to be capable of great variation of position; but fortunately very little variation of the direction of the foot is necessary in treating fractures, and that little can be much more certainly and perfectly effected by address in managing the extending tapes. The attitude of repose is the one in which the whole member should be secured, and that attitude requires the foot to be placed in a state of demi-flexion, semi-adduction, and slight rotation outward;—the position of sleep. This cannot be imitated by a foot-board without great expense and very complex machinery, which at last would be much less successful than the just regulation of the direction and amount of force applied by means of two extending tapes, tied in a single knot beneath the foot, and aided by the piece of roller round the toes. By changing the position of the knot the degree of abduction is determined at will, and by loosening or tightening the roller the foot is extended or flexed to any degree at the same time that the toes are allowed to rotate only so far as is considered desirable.

But ninety-nine out of a hundred foot-boards are made nearly perpendicular to the axis of the limb, compelling the foot into the position which it assumes when the patient stands in an erect position. This relaxes the fibulo-tarsal ligaments and the abductor muscles of the leg, while it obliges the deltoid ligament and the adductors to bear nearly the whole extending force and the reaction of the bands, which, slight as they are when rightly managed, often occasion pain below the internal malleolus, and increase the danger of stiffness in the ankle from the long confinement of the limb. For these reasons I esteem the introduction of any foot-boards whatever in the apparatus for fractures of the lower extremities as an evil; and if these be discarded, we reap the additional advantage of lessening the almost resistless propensities of inventors toward the employment of screws, wheels and axles, springs, pullies, weights, &c., as means of extension. Fortunately nearly all possible modifications of these contrivances have now been offered to the public, and assuredly it would be no ordinary proof of genius to bring forward a real novelty in this part of the apparatus, however indefensible it might prove in practice. It is distressing to think that, through the evil consequences growing out of the complexity and malappropriation of the parts of the apparatus, the treatment in the extended position is going out of fashion in the land of its birth; but the French have never imitated,—perhaps

they have never heard of, the beautiful simplifications of their own instruments effected by American surgeons, and especially by those of the Philadelphia school. Had they tried them, it is hardly possible that they could have ever relapsed into the use of the double flexed position!

It is now time to speak of the nature of the forces which produce displacements in an angular or lateral direction, so far as they are connected with our present purpose.

Whatever displacement may have resulted from the fracturing force in the first instance, or from the subsequent action of the muscles, so soon as the limb is brought as nearly as possible to its proper length and the foot placed in its natural position, there remains very little tendency to lateral or angular displacement, except from the weight of the limb when the part where the fracture exists is ill supported.

If both bones of the leg be broken, the broad surfaces of the tibial extremities generally afford each other too much support to allow either to sink passively beneath its just level, and the muscles of the calf are by no means inefficient splints. But great care is sometimes necessary in regulating the position of the heel. The most common deformity that I have seen after fractures in the middle of the leg, has been a slight angular displacement backward, from too great an elevation of the heel during treatment. Extension is very rarely necessary in these cases, but some persons are fond of a foot-board even in fractures without shortening. I have never seen one used throughout the case without producing more or less angular deformity. The degree of support to be given beneath to all parts of the limb is best obtained by a pillow or graduated compress; or, when no extension is employed, the intervals between a soft pillow and the limb may be filled with bran, according to the plan employed by Dr. John Rhea Barton in compound fractures.

In fractures of the thigh, from muscular actions too well understood to need analysis here, there is generally some tendency to displacement outward and a little forward at the lower end of the superior fragment, and a similar tendency inward and a little backward at the upper extremity of the lower fragment. This tendency is obvious enough while the limb is shortened, but becomes almost a nullity when it is fully extended; for then all the muscular fibres being able to exert their tonic contraction pretty equably on all sides, preserve the stasis of the fragments much more perfectly than when relaxed by overlapping.

To hold in check this disposition to lateral deformity, it is proper

to have two lateral splints of some kind to press upon the sides of the limb, through the medium of some chaff or bran sewed in a narrow muslin bag; but these are by no means absolutely necessary. Three handkerchiefs, two belying pins, some buckskin, blankets, a sea-chest, nails, an auger, and a hatchet, will enable a marine surgeon to treat a fractured thigh with tolerable success, if his patient be hardy and in good health. I have seen a most perfect cure that had been effected by a sea captain who had walked the wards of a hospital a few times, and whose apparatus was still simpler. His sail duck counter-extending band was nailed near the head of a birth, and his extension was made by means of a strip of the same material, secured in the same manner to the foot of the birth, and tightened as occasion required. It would certainly be inconvenient, but by no means difficult, to treat a case on a common mattress, with no other mechanical aids than the bands and the bedstead. Still the splints are not only convenient, as furnishing the best possible attachments for the bands, but they are important in checking, in a slight degree, any disposition to lateral deformity, and in protecting the limb from accidental disturbance.

Much debate formerly took place as to the relative merits of short and long splints in these fractures. The former are now chiefly employed by the advocates of the double inclined plane of White, or by the few remaining disciples of Pott. Both these plans of treatment are foreign to our present investigation, and the short splints are only mentioned as accessory parts in the apparatus of Boyer and Dessault, with their American modifications. In Doctor Hartshorne's modification, as it is called, of the former, which in fact differs more widely from the original than that does from the apparatus of Dessault, the short splints are entirely dispensed with; but in Doctor Physick's modification of the latter, one posterior and one anterior short splint of pasteboard are described. The only necessity for these grows out of the employment of tapes in securing the splints. These tapes may cut the thigh or irritate it by their pressure, if permitted to bear directly on the limb; but by replacing them with broad pieces of roller this difficulty is obviated, and the apparatus is simplified by the abstraction of two inconvenient parts.

If, as sometimes happens when the fracture takes place below the middle of the bone, the ham or lower part of the os femoris requires support from beneath, this is better accomplished by means of a graduated compress laid on the mattress than by any splint. A carved splint exactly fitting the patient might indeed answer a good purpose, but it is extremely difficult to find such a one; and even if

found and applied properly in the first instance, it would cease to fit the patient in many instances before the commencement of union, in consequence of the gradual attenuation of the limb from confinement and pressure:—the false dependence placed upon it would then become a serious evil to the patient.

Let us pass to the consideration of the roller or bandage of strips applied directly to the limb, as recommended in the descriptions of all the apparatus except Hartshorne's modification of Boyer. The roller is exceedingly objectionable, even when continued no higher than the knee; for all such applications require occasional changes, and he is an able bandager who can make a roller of six yards retain its place more than ten days without becoming creased or unequal in pressure, so as to prove a source of either irritation or embarrassed circulation. If a change be required, it can only be accomplished by removing the apparatus and raising the limb—to the great disturbance of the fragments—it may be, at a most critical moment. If, then, any bandage be employed, it should be a bandage of strips, but it is only in a few cases of exception that a bandage is required.

When there are present such complications as extensive ecchymoses, unusual depositions of new bone, or œdematous swellings, demanding pressure to simulate the process of absorption and to diminish that of deposition, the bandage of strips may prove highly serviceable; but among more than fifty cases it has been found necessary in only two. It may be laid down, then, as a general rule that, in fractures of the thigh, the application of bandages directly to the limb is very rarely necessary.

It is a rule admitting of no dispute, (for it is founded upon mathematical principles,) that extension and counter-extension should be effected as nearly in opposite directions as the physiological peculiarities of the parts interested will permit. The modes of fulfilling this law, as practiced by American surgeons, are very superior to those employed abroad, if we judge exclusively from published records. They may be resolved into two. In the first, the counter-extension is made by means of a pad attached to the inner splint, and the extension is made by passing the tapes of the extending band through holes made in the centre of a cross piece, connecting the two splints below the foot, the splints being consolidated by cross pieces passing from one to the other. The obliquity between the two lines of direction is exceedingly slight in this apparatus, nor is it possible to diminish it further, unless at the expense of serious evils. In the second mode, the counter-extending band passes round the perineum and is secured very near the upper extremity of the outer splint, which reaches to

the axilla. The extending band passes over a notch in a block appended perpendicularly to the outer splint below the foot, the bottom of the notch being intended to correspond with the middle of the sole of the foot. The obliquity of the counter-extension in this apparatus is considerably greater than in that previously noticed; but the extension is effected in a manner equally advantageous.

The first of these apparatus is Hartshorne's modification of Boyer, the second, Physick's modification of Dessault.

It is evident that if we cast aside all physiological considerations, the former has the advantage in the directness of the opposing forces, but if the nature of the surfaces pressed on be taken into account, I think the claims of the latter in all ordinary cases will be found superior.

In Dr. Hartshorne's apparatus, the counter-extension bears almost exclusively upon the integuments covering the body of the pubic bone, between the penis and the scrotum on the one hand, and the muscles of the thigh on the other. These integuments are very intolerant of pressure, and the surface acted upon is very small. In Dr. Physick's, on the contrary, a very considerable part of this force acts upon the skin over the tuberosity of the ischium, and this will bear much greater impressions with impunity. The question is, will this distribution of the force more than compensate us for the loss of power growing out of the greater obliquity of the band?

Both theoretical reasoning and practical comparisons induce me to answer in the affirmative. The facility with which a sliding piece can be adapted to either of Dr. Hartshorne's splints, without disturbing the extension, (for there is no junct-cloth in this apparatus,) enables us to lay bare any portion of the limb, and to apply dressings with facility in certain cases of compound fracture, giving this contrivance a considerable advantage over Dr. Physick's modification in such cases, but in all simple fractures the latter is preferable. I have never seen sloughing, and very rarely excoriation, about the tuberosity of the ischium, from the use of a counter-extending band; and when abrasion has happened in that situation, it has been the result of defective stitching or creasing in the band: immediately beneath the body of the pubis, excoriation has occurred occasionally. But when the counter-extension has been made by means of a pad on the upper end of the inner splint, not only has more or less excoriation taken place in almost every instance, but deep sloughing supervened in two cases; a result which I have never seen in the same situation under the action of any other apparatus. It is right to mention, however, that in both these cases adhesive plaster spread on buckskin was used to prevent

the very evils it accelerated. In conversation with a particular friend, who was lauding our superior success in amputations, compared with that obtained in French hospitals, (a success, I am sorry to say, less conspicuous of late than formerly,) and which my friend attributed to our skill in closing and protecting the stumps, a Parisian surgeon remarked that a little "*betisse de pansement*," could not possibly produce such wide differences of results! But any one who has watched with care the practice of numerous operators, must have perceived that a little impropriety in the dressings in the treatment of fractures, is often more important than even a considerable mechanical defect in the apparatus employed. I have treated with entire success, that is, without appreciable deformity, several cases of fractured thigh complicated with wounds that rendered Dr. Physick's apparatus inconvenient, by means of Dr. H.'s first modification, adding a slide to one splint; but more extensive observations on the practice of others, who employ this apparatus in simple fractures, convinces me that it is much more likely to occasion ulceration in the perineum, and hence, that the physiological objections to its *general use*, outweigh its mechanical advantages.

In the modification of Dr. Physick, an attempt was made to effect part of the counter-extension by means of a crutch-like appendage to the outer splint, but the axilla was found too little tolerant of pressure, and far too moveable and compressible to admit of any action of this kind, and this appendage serving no other useful purpose, has been since given up by its author, and is seldom seen in practice.

The original contrivances of Dessault and Boyer, together with their modifications, as described in books, are provided with a broad belt binding the outer splint to the body, and it was against this part of the machinery that Mr. John Bell formerly launched the thunder of his heaviest anathemas. It answers no good purpose in either of the modifications, for the exact parallelism of the outer splint with the body is unimportant, and may be allowed to depend on the will of the patient. This band is now scarcely ever employed in actual practice, and should not appear in the figures in the treatises.

Having now completed most of our intended strictures upon the apparatus which are the principal subject of this paper, giving preference, in cases of simple fracture, to that of Dr. Physick, it is time to describe the mode of applying this dressing in its simplified state, as practiced in the Pennsylvania Hospital, for many years, with the most remarkable success.

The patient generally arrives at the institution on a hand-barrow, or on a settee, and dressed. The surgeon should always personally

inspect the removal of the lower clothing, *taking charge of the injured limb himself* during the process. A slight examination or a coup d'œil having determined the existence of a fracture of the shaft of the femur, or of both bones of the leg with shortening of the member, (for permanent extension is not employed in the fractures of the leg unattended with shortening) he proceeds to prepare the bed, which is a mattrass. He first lays down transversely three broad pieces of roller, each nearly a yard in length, and so placed that when the patient takes his intended position, one of them may correspond with the middle of the thigh, another with the parts just above the condyles, and the third, with those below the belly of the gastrocnemii muscles. Over these is laid a junct-cloth a yard or more in length, and wide enough to reach from within an inch of the malleoli to the upper third of the thigh—a little above the junct-cloth we lay the counter-extending band, with its centre a few inches inward from the middle of the cloth, and its extremities stretched out diagonally from one head-post of the bed toward the opposite foot-post. The bed is now ready for the removal of the patient, which should be done in the following manner:

Two assistants, previously informed of the manner of acting, and the purpose in view, are placed facing each other, one on each side of the patient. A third stands by the side of the knee on the uninjured side, facing the surgeon, who takes a similar position by the fractured limb. The two upper assistants are now directed to insert, slowly, and gently, each a hand beneath the buttocks of the patient, where they interlock their fingers. They then pass their other hands beneath the axilla, interlocking in like manner on the spine, raising the shoulders of the patient a little. They then wait the word of command. The surgeon now places one hand beneath the middle of the leg, and the other beneath the seat of fracture, if the thigh be broken; but if it be the leg, the first hand grasps the ankle, and the second is placed beneath the ham. The third assistant with the sound limb follows the movements of the surgeon. The word is now given, and the aids all raise the patient simultaneously, conveying him to the foot of the bed, and moving on opposite sides, lift him to the desired position, where he is gently laid down. These may seem like unnecessarily minute details, but the observer has had his nerves too often racked by the awkward handling of unfortunate wretches by unpractised hands not to feel convinced of their importance. Such details are precisely what practitioners who see but little of surgery most require.

The surgeon then lays the fractured limb straight along the middle

line of the junct-cloth and applies the extending band. He next disengages the lower end of the counter-extending band, reverts it, and adjusts it to the perineum; leaving the ends of the tapes on the shoulder of the injured side, and drawing out that portion of the junct-cloth which lies under the uninjured limb, he throws it across the bed, in front of the leg and thigh of the sound side.

The next step is the adjustment of the internal splint; for if the surgeon commences with the outer one, he will find it very difficult to succeed with neatness. This splint is to be rolled in the junct-cloth in such a manner as to lie parallel to the general obliquity of the limb, just touching the surface at the upper part of the thigh and at the side of the calf of the leg, if the subject be muscular; but if attenuated, the contact will take place only at the internal condyle of the femur. This being effected, the inner chaff bag is placed upon the splint, laid over so as to rest on the sound thigh, and the chaff is driven along by the hands so as to leave a thin stratum only at the points of contact, and enough in other places to correspond with the depressions of the limb. This bag, like the splint, stops a little short of the ankle, which should always be left unembarrassed to facilitate admeasurement.

The long external splint is next enveloped, and the chaff bag adjusted in the same manner, the splint being reclined, the while, horizontally upon the bed. This chaff bag also should stop short of the ankle. The tapes of the counter-extending band are now passed through the auger holes at the upper extremity of the splint, and both splints being turned to the limb, where they are held by an assistant for the moment, the tapes are moderately tightened, until the junct-cloth is thrown into slight waves by the descent of the outer splint. The tapes are then tied in a double bow-knot.

The surgeon now passes to the foot of the bed, places his knee against the extremity of the outer splint, and proceeds to make extension in the manner prescribed in the earlier part of this paper, until he has either brought the limb to the full length, or, if that cannot be accomplished, until he has gained all that he thinks adviseable at a first effort. While the extension is continued, the assistant is directed to tighten and tie firmly the tapes of the extending band, and the surgeon then removes his hands from the ankle. He measures the limb, the splints are then turned up, and the three pieces of roller successively tied; which process completes the dressing.

If the limb be not drawn to its full length at first, the extension should be repeated at intervals of an hour, if possible, until this object is effected; and great care should be taken to lose nothing

that is once gained during the treatment. If pain from the pressure of the bands be made a subject of complaint with the patient, it will generally pass off in a few hours, or yield to refrigerant medicines or an opiate, according to the degree of fever that may attend the accident.

Whenever extension is renewed, the three pieces of roller should be thrown loose, but no farther alteration is required except the tightening of the extending band by the assistant while the surgeon effects the extension with his hands.

It will be perceived that this apparatus is vastly simplified beyond the original dressings of Dessault, and not inconsiderably beyond the modification of Dr. Physick as described in books—but it contains all the parts necessary for the treatment of nineteen cases out of twenty, and is attended with a degree of success in simple fractures which leaves little to be desired, provided the materials employed be rightly chosen. It is said that the straight position is going out of date in France, and it is known to have made, as yet, but few converts in England, where a somewhat unreasonable adherence to ancient or national custom has been a national characteristic, which explains the prejudicial influence over the treatment of fractures exerted by the authority of that truly great surgeon Percival Pott. The less explicable rejection of this method by the French will not appear surprising, when it is considered that, by simple resolution, the force necessarily employed in extension and counter-extension, waving all question of friction, is nearly four times as great in the contrivances of Dessault and Boyer, as in those of Physick and Hartshorne! There may have been more perfect apparatus contrived in that country, to act on the same principle—but none such has come to my knowledge—and even if vague reports of the success and mode of treatment, on this side the Atlantic, should have reached Parisian ears, the little details upon which that success depends must have been generally sought in vain—certainly they are not to be found in books.—Our younger brethren who annually fly from the *green-box* to Paris, visit that great metropolis of science, to receive and not to communicate information; few indeed have visited Europe who are *au fait* upon even one specialty that has received particular attention here; till recently we have not been a publishing people; how ridiculous then is that excessive vanity which induces us to grumble at the neglect of our claims in foreign nations. In the surgical department we have done enough for glory, but what boots it if we do not propagate the knowledge of our labours! Our very improvements die in our own land, and are, from time to time, resuscitated as novelties for want of

records—measures condemned by their own authors still haunt the day, claiming the name of the very parents by whom they have been disowned! An instance of the latter kind is in point.

Dr. Hutchinson, who added the terminal notched block to the long splint of Dr. Physick, and thus diminished by at least one-half the pressure of the extending band, contrived, some third of a century since, two splints for fractures of the leg with shortening of the limb. They reached no higher than the knee, and the counter-extension was made by means of four tapes, secured, two on each side of the leg, by several circular turns of a roller just below the knee, and tied, through gimlet holes, to the splints. The stress upon these turns embarrassed the venous circulation; serious dangers resulted, as might have been expected, and the apparatus was soon relinquished by its inventor. But even to this day we hear of it, and meet with it occasionally under the title of Hutchinson's splints—and to cap the climax, it is sometimes used by country practitioners, tapes, roller and all, in transverse fractures without shortening; the tapes being employed simply to keep the splints together! I aim this blow in passing, because this contrivance is really one of the worst in the whole range of the *materia chirurgica*, as must be obvious to any one who will examine it dispassionately! If extension be required in a fracture of the leg, (which is very seldom the case,) it cannot be accomplished properly in any other way than by the apparatus for the thigh.

Before concluding our remarks, it is necessary to consider what materials and forms are most proper for the extending and counter-extending bands. I shall not stop to analyze the defects of the various gaiters, shoes, socks, straps, with or without buckles, &c., &c., which have been recommended by various surgeons. My object is to proceed from principles and facts which will receive general assent, to the description of the simplest contrivances that I have been able to discover, for fulfilling the indications in a manner consistent with those principles and facts. The results are not theoretical only, but each of the bands has been employed in many cases and its effects compared with those in general use.

The following important points should never be neglected in the selection of materials for bands. They should be inextensible, or they will permit of a gradual retraction of the limb, and an undue irritation of the neighbouring parts by the jagged ends of the fragments. They should be flexible, in order that they may adapt themselves perfectly to the parts on which they press; soft, that they may not irritate the skin; porous, that they may not check the insensible perspiration; for such an arrest for any length of time, invariably renders

the surface tender; and they should be cool, that they may not unduly promote the sensible perspiration, which is quite as injurious in its action when long continued. All these requisites cannot well be fulfilled by any one tissue or substance; and the bands therefore require to be composed of two or more.

There are also two things to be considered in placing the extending band. It should not cover the malleoli, or it will confuse the measurement of the limb, which is a very serious inconvenience; and it should be so arranged as to exert its principal stress upon those parts on which the cuticle is rendered thick and callous by pressure; namely, the back of the heel, and the top of the instep.

To fulfil the requisites with regard to the material, the best extemporaneous contrivance for an extending band is a choppa handkerchief folded diagonally. But even silk, though the mildest of tissues, is somewhat irritating to the skin, and the threads and creases of so irregular a mass, produce, in a few days, some inequalities and redness of the parts pressed upon, which pave the way for excoriation. These inconveniences may be remedied by passing a strip of buckskin beneath the handkerchief. But another difficulty, not to be entirely conquered, is offered by the bulk of the band, which renders the knot uncertain and difficult to manage.

There are two modes of applying the handkerchief. The first, in common use, and known to every one, is that in which the centre of the handkerchief is applied over the tendo achilles, the ends brought round above the malleoli to the front of the leg, crossed upon the top of the instep, made to descend on the opposite sides of the tarsus, tied in a single knot a few inches beneath the sole, and then passed over the block to be secured to the splint. The principal objections to this measure are these: it keeps the foot in a constant and painful state of extension, and has a tendency to draw the heel backward, so as to increase its friction on the bed, or compresses, and perhaps occasions an angular deformity, if the fracture be one of the leg. Moreover, the middle of the handkerchief presses on parts that become thinned and irritated by pressure, not being designed by nature to receive such impressions. If we attempt to remove these objections by supporting the toes in a loup of roller pinned high up on the inner splint, we employ the foot as a lever of the third order, and must exert nearly one-third more extending force to accomplish a given effect than would be necessary if the band acted directly in the axis of the limb. The whole power is also borne by the crossing on the instep without any material diminution of the pressure on the tendo-achilles, where the band acts nearly at right angles to the direction of force.

The second mode of application is much more philosophical, when viewed merely in a mechanical light. It was first communicated to me in 1824, by Dr. John Rhea Barton, though whether original with himself or derived from the traditionary and inedited legends of the Pennsylvania Hospital practice, I know not. If the latter be the case, he deserves at least the credit of reviving it, for during and since my house surgeoncy, which terminated in 1823, I believe it has not been employed in that Institution. The following description of this mode of application will convey a clear idea to the reader without the aid of a figure, and the application itself will at once convince him of the mechanical excellence of the plan.

Fold the handkerchief diagonally again and again, by inverting it from both corners equally toward the middle line, until it is about two inches, or two and a half wide. Place it behind the top of the heel, leaving two-thirds of its length free toward the sound limb, and one-third on the outside of the fractured limb; now seize both tails of the handkerchief, and bring the outer or shorter one loosely round *below* the external malleolus, and over the instep to the internal malleolus. Bring forward the inner or longer tail, and pass it above the shorter one; then cause the long tail to take a turn round the short one, causing it to pass successively without, below, within, and over the short tail, so as to form a single knot; adjust this knot a little below the internal malleolus, and then draw the end of the short tail perpendicularly downward. Carry the remainder of the long tail transversely under the sole of the foot, nearly to the external malleolus; there pass it upward between the foot and the first turn of the handkerchief at that spot, and reverting it outward over that turn, draw it, also, perpendicularly downward. Now make a single knot in the remaining ends of the handkerchief, a few inches beneath the sole of the foot, and the extending band is complete. When secured to the splint this contrivance presents one oblique turn passing over the instep, and another over the top of the heel. The lateral knots are drawn down to the level of the sole of the foot, and do not press on any part of it. The two malleoli are left naked, and no part of the leg is touched by the bandage. Nearly all the pressure is exerted on the two points best fitted to endure it, which share it equally between them, and the direction of force corresponds precisely with that of the limb. A little adjustment of the lateral knots gives any required degree of extension or flexion to the foot, and a similar arrangement of the lowest knot accomplishes any desirable amount of abduction. Mechanically, this band is nearly perfect; the only physiological objections, other than those urged against all kinds of fabric, are more specious than valid. The tension is borne entirely by the parts sup-

porting the ankle joint; but a truly philosophical analysis of all the extending bands in use, will show that nearly all their effective power really acts in a similar manner, and the little gained in some of the *gaiters*, by their constriction of the leg above the projecting malleoli, is far more than compensated by an embarrassed venous circulation, a great difficulty of admeasurement, and a necessity for the employment of extensible materials in making them. The difficulty resulting from the pressure of threads and creases is not so easily obviated in this mode of application, as it is in that formerly described; for it is not easy to retain a piece of buckskin between the handkerchief and the heel, and the application of adhesive plaster is out of the question, for reasons already pointed out. I have never employed bands on this principle, except in fractures of the leg near to or involving the ankle joint, and requiring permanent extension. In such cases, the plan of treatment is of inestimable value.

The handkerchiefs make the most convenient extemporaneous extending bands; but in hospitals, and more deliberate practice, we may still refine a little upon them. Buckskin is one of the very blandest applications to the skin, and Holland linen is the least extensible of our ordinary cloths. The two combined appear to me to furnish the best material for the most perfect extending bands. The following arrangement, modelled after the first form of the handkerchief, I have used in certainly not less than thirty cases, without a single instance of excoriation.

A piece of brown Hollands, slightly biassed, but leaving the central threads continuous throughout—from fifteen to eighteen inches in length, if designed for an adult—two inches wide in the middle, and narrowing from each side—rapidly at first, and then slowly—toward the extremities, which are an inch in width—is lined throughout nearly its whole length with thick buckskin, a very little wider than the linen; the latter being simply basted to the former, by stitches which are made to dip but half way through the skin. Two pieces of tape, each an inch in width, are sewed securely to the ends of the linen bands in the last two or three inches of their length.

This band is applied precisely after the manner of the handkerchief when used according to the first method. It presents an unbroken surface of buckskin to the skin, and is almost perfectly inextensible, the slight bias and curvature of the edges merely preventing them from cutting sharply on the tendo-achilles. Since the House Surgery of Dr. Kirkbride, this band has been revived in Hospital practice, where I believe it continues to claim a preference over the other means of extension. I have, indeed, seen it produce excoriation of the instep in one instance in that institution within the last year, but

in this case, the perversity of the patient led him to interfere continually with the counter-extending band; and the frequent alternations of extension and counter-extension explained the accident.

I have also imitated the second method of applying the handkerchief very satisfactorily, with strips of Holland linen lined with buckskin—but as no method of commanding the position of the foot with the same degree of certainty without leaving a few stitches in contact with the skin has yet been discovered, the band is still imperfect, and need not be described at present. Any ingenious surgeon will perceive, without description, the manner in which it should be made, if we neglect this power of adjustment.

With regard to the counter-extending bands, the directions given in the books are generally imperfect, and the young surgeon is left to form them pretty much as he pleases. Some use a long roller doubled upon itself several times lengthwise, which invariably produces ulceration of the perineum. Some employ a long narrow bag filled with tow or cotton, which is not only compressible, and therefore uncertain in its action, but the stuffing soon becomes either hard and matted, or collected into lumps or irregularities. What wonder then that these bags cause excoriation!—Some make their bands by tying several silk handkerchiefs together; which is often the best temporary arrangement, and is also vastly preferable to the other measures as a permanent dependence. But few introduce a piece of soft buckskin between the band and the skin, which would at once remove the chief objections to each of the plans just mentioned, and those who do, are so frequently disappointed by finding the buckskin continually slipping off, that they often resort to adhesive plaster to secure it. *If the plaster were turned towards the band, this manœuvre might indeed be of some use!* but unfortunately it is generally turned toward the skin, where it inevitably occasions much irritation, and very often still worse consequences.

Having witnessed these imperfections of the bands in common use, I contrived, in 1819, the following, which was soon employed in all cases treated by Dr. Physick's method in the Pennsylvania Hospital, but was lost sight of during the internal changes of organization in that Institution which commenced in 1823. It was again introduced by Dr. Kirkbride.

Take a piece of Holland linen long enough to extend round the perineum and to reach, before and behind, above the crista of the os ilium. Let its width be about three inches, for the adult—double it, and sew the edges together firmly, with a secure selvage, leaving one end open and closing the other. Revert this sac by means of a large

bodkin or small stick, and then pour in bran or chaff sufficient to fill it lightly. Then quilt nearly one-third of the closed extremity so as to flatten it to the thickness of half an inch or less. Next stuff the bran or chaff firmly down with a round stick, till the central third or a little more is rendered round and quite firm. Pour in a little more bran or chaff,—close the open end of the sac, and quilt the terminal third as before. To each end of the sac sew a broad piece of tape three-fourths of a yard long, and the band is complete. Next take a piece of soft buckskin, about three inches and a half wide, and fully half as long as the sac—double this, and stitch the edges lightly together, leaving the ends of the tube open. This is used as a cover.—When applied, the cover is made to slide over and enclose that part of the band which presses on the pubis, perineum, and tuberosity of the ischium, and the seam being *turned from these parts*, the cover may be fixed permanently to the sac by a single stitch. If soiled, which seldom happens, the band is protected and the cover may be replaced. The flattened ends of the sac lie under the nates and over the lower part of the abdomen. This band is at once soft, flexible, and inextensible. It is simple, and the materials for its structure always at hand. I have never seen it occasion irritation.

One word to the country practitioner, whose immediate resources in accidents are often limited, and I will close this rather lengthened essay.

There is scarcely ever a necessity for rapid action in a case of fractured leg or thigh; but it would be wrong to leave the patient to undergo the gradual shortening of the limb from continual muscular action, while the surgeon rides twenty miles for his splints—perhaps visiting an obstetric case by the way—or while he superintends the preparation of these indispensable instruments, in the shop of some village carpenter who never saw what he is required to make. Let him then secure the limb by temporary means, and save his patient the exquisite pain of involuntary motions, the irritation from the pressure of the fragments upon lacerated muscles, and the increased force required to conquer the contractions. The dairy maid's apron will serve him for counter-extension, and his own pocket handkerchief for extension. Let the patient be placed on the bed diagonally, and employ one head-post and the opposite foot-post, for securing the bands. The surgeon can then proceed coolly and leisurely for his apparatus, certain that his patient suffers but little, and that scarce any thing is lost by the delay.

I have been driven to these straits myself, and I would never leave the bed-side without securing the patient against retraction of the limb.

ART. IV. *Remarks on the Sandwich Islands; their Situation, Climate, Diseases, and their suitableness as a resort for individuals affected with or predisposed to Pulmonary Diseases.* By ALONZO CHAPIN, M. D., late a resident missionary at those Islands.

The following remarks, founded on cursory observations, while at the Sandwich Islands, where I resided three and a half years, have been written since my return to this country. I did not, while on the spot, note facts and events as they occurred, not having had in view at the time, to present them to the public, and not having contemplated a return, till the circumstances of my family rendered it necessary to seek a colder climate. I consequently can offer my remarks as mere reminiscences only. My inability to state with more fulness and particularity, several of the subjects included, I much regret; but some apology may be found in the brief period of my residence at the islands,—in the difficulties presented by the ignorance and prejudices of the people, to making correct and satisfactory medical observation,—and also in the great amount and variety of labours required, in the discharge of our missionary duties, which prevented an improvement of such means as were accessible.

The Sandwich Islands, eight in number, are situated between $18^{\circ} 50'$, and $22^{\circ} 20'$, north latitude; and $154^{\circ} 53'$, and $160^{\circ} 15'$, west longitude. Two or three barren rocks are usually numbered with the other islands; but only eight are inhabited or have any vegetation. In their dimensions they vary greatly; the smallest not being more than eight or ten miles long, while the largest is ninety miles long, and fifty or sixty in breadth. The whole group is collectively called *Hawaii** by the natives, because that is the largest island, and the others were all subjugated by Kamehameha, one of its kings.

The interior of each island is uniformly elevated, and among them are found mountains of the first order of elevation. Those on *Hawaii* rise to the height of about 14,000 feet, and have snow on their summits a great part of the year. The whole group are of volcanic origin. Numerous extinct craters of different periods and dimensions are scattered over the surface, and two large volcanos are still in action, affording immense currents of liquid lava.

The shores of the islands are much diversified, and furrowed with

* The term, *Owhyhee*, is still erroneously applied by most foreigners to the largest of the Sandwich Islands. The letter *o*, which is sometimes prefixed by the natives, and sometimes omitted, is merely a sign of the nominative case. That being rejected and the European continental sound, the sound used by the natives, being given to *a* and *i*, and the name becomes clearly *Hawaii*.

frequent ravines, some of great depth, which furnish courses for the impetuous mountain streams. Plains of different dimensions, varying from a few rods to many miles in extent, are frequent. More commonly, however, the mountains extend with a gradual slope entirely to the beach, and here and there present bold and lofty precipices to the dashing of the waves. The sides of the mountains, if we except the loftiest, are verdant entirely to their summits, and present immense tracts of an exceedingly fertile soil.

The leeward shores have generally an arid and even sterile aspect, owing to the infrequency of rain. Vegetation is there promoted mostly by irrigations from the streams, and it is only those tracts immediately contiguous to these which possess much verdure, or will admit of cultivation. The condensation of the vapour, from the damp trades in their passage over the mountains, produces continual rains on their summits, which, extending backward towards the sea, keep the earth wet much of the time, and give rise to a most luxuriant growth of vegetation. Hence the windward sides of all the islands are, unlike their leeward shores, extremely fruitful and productive.

The productions are such as are common to all intertropical regions. The *sweet potatoe* and the *kalo*, (*Arum esculentum*), are the vegetables in the most general use, and on them the natives mostly subsist. If we except a few fruits, and a scanty and irregular supply of fish and other meats, they have little else to eat. The mountains abound in esculent roots, both mild and nutritious, which constitute a ready and abundant supply for their sustenance whenever, as sometimes happens, they are pinched by drought or famine. Other vegetables, and a considerable supply of fruits are cultivated, though the variety is not great. *Sugar cane*, *bananas*, and *yams* are abundant; and foreign productions are beginning to be extensively cultivated for the special purpose of supplying ships.

The *Arum esculentum*, which is more generally eaten by the inhabitants than any other vegetable, grows like the *Arum triphyllum*, in wet or damp situations only, and when uncooked is like that, exceedingly styptic and acrimonious. These qualities are destroyed by heat. The natives prepare it for use by cooking it thoroughly, pounding it to a pulp, and adding water sufficient to make of it a thick paste, in which state it is called *poi*, and is eaten with one or two fingers, according to its consistency. As an article of diet, it is simple and nutritious; and after the fermentative process has commenced, it is preferred by the people.

Climate. Situated in the very midst of the vast Pacific, without any extensive inland causes to affect the temperature, and remote

from the cold chilling winds of the temperate and frigid zones, the Sandwich Islands possess a remarkable evenness in the degrees of atmospheric temperature. Cool breezes by day from the sea, and by night from the mountains, serve to mitigate the burning heat produced by a vertical sun, and to render the climate pleasant. The thermometer varies but little from day to day, and even from month to month; and what is particularly to be remarked, all portions of the islands, along the shores, are alike in this respect. Districts most parched by heat and drought do not differ essentially in temperature from those sections where almost daily showers and perpetual trade-winds prevail. As, however, we recede from the low lands along the sea and ascend the mountains, a change is immediately perceived, and along their extended sides we may procure almost any degree of temperature. Retreats have been fitted up in elevated situations for the benefit of invalids relaxed by the long and continuous heat below, but have been found objectionable on account of the great dampness caused by the frequent showers, and have been abandoned.

The register of the thermometer, which I subjoin, was furnished by the missionaries residing at Hanolulu, on the southern side of Oahu. Their observations were made during the years 1821 and 1822, at the hours of 8, A. M., and 3 and 8, P. M. I copy it from Ellis' *Polyne-sian Researches*.

Months.	Greatest heat.	Least heat.	Range.	General range.	Mean temp.	General course of the wind.	General state of the Weather.
August, 1821.	88°	74°	14°	75° to 85°	79°	N. E.	Clear; rain but once.
September,	87	74	13	76 " 84	78	N. E.	Rained on five days.
October,	86	73	13	76 " 83	78	N. E.	Clear; rain but once.
November,	82	71	11	75 " 80	76	N. E.	Clear; rain but once.
December,	80	62	18	70 " 78	72	N. & N. E.	Clear; rain twice.
January, 1822.	80	59	21	68 " 76	70	variable.	Rain one day; cloudy eight.
February,	77	61	16	68 " 75	71	N. E.	Rain four days, cloudy fourteen.
March,	78	66	12	71 " 75	72	N. E.	Rain five days; cloudy thirteen.
April,	81	62	19	72 " 78	73	variable.	Rain five days; cloudy seventeen.
May,	81	72	9	75 " 80	76	N. E.	Rain four days; cloudy seven.
June,	84	71	13	76 " 81	78	N. E.	Cloudy six days.
July.	84	74	10	76 " 83	78	N. E.	Rain five days; cloudy twelve.
Results for the year.	88	59	27	70 " 80	75	N. E.	Rain on forty days. Usually clear the rest of the time.

By this register it will be seen that the greatest heat during the year was 88°, the least heat was 59°, the mean temperature 75.

Rev. William Richards, residing at Lahaina on the island of Mani, has, during the past ten years, been in the habit of noting the changes of the thermometer. He has made his observations with great care, having sought those situations most favourable to exactness. I have a copy of his journal in my possession. It exhibits the highest thermometrical elevation at 86°, the lowest at 54°, the extreme difference

32°, and no day during the whole period exhibits a difference of more than 19°. June has the highest range, January the lowest. Lahaina is situated near the north-western extremity of the island, and is not affected by the trade winds except as they occasionally break with great violence over the northern end of the mountains. It is one of the most arid districts of the group, and has seldom rain sufficient to moisten the soil through its whole depth, except in the winter or rainy season. For months in succession the sun is scarcely obscured by clouds, and its exemption from the direct influence of the trades might lead us to expect several degrees of the thermometer above the more wet and windy portions, but so far as my observation has extended, and I have visited every important island, it is not the case.

Diseases. Such is the equableness of the climate, and the simplicity of the natives in their regimen and most of their habits of life, that compared with *civilized* countries, the variety of their diseases is neither numerous nor complex. Their remoteness from other lands is so great that but few contagious diseases are imported among them. Even the *cholera* which has of late passed over almost the whole surface of our planet, became inert and powerless before it reached those islands.

The diseases most common within my circle of observation, were *fevers, ophthalmia, catarrhs and asthma, rheumatism, venereal, diarrhoea, dysentery, cutaneous diseases, scrofula, dropsy, etc.*, and they occurred, in frequency, in about the order in which I have mentioned them. Diseases sometimes occur epidemically, as was the case with catarrh repeatedly, and croup once during my residence at the islands. Many other diseases, not specified, were often met with.

Fevers. Though these are the most frequent and numerous class of diseases among the native population, they are by no means the most malignant and fatal. They occur in almost every form, but when idiopathic are usually remittent. They are, however, most frequently symptomatic of other diseases.

The excitable state of the system, which predisposes so strongly to febrile attacks is not common at these islands. The *continued and oppressive heat is there not sufficient of itself to produce it*; and the universal custom among the people, to repose during the hottest part of the day, will aid in counteracting other unfavourable influences. The simplicity, too, of their diet and habits of life are not calculated to promote a state of excitability. Their food, as I have before remarked, is mostly vegetable, with but a scanty and irregular supply of meat. Until of late they have made use of none of the stimulating condiments so *profusely* employed in *civilized* countries. Their only

drink is water. The laws of most of the islands prohibit the use of ardent spirits, and the mass of the people can but rarely obtain it. In their movements, the natives are extremely moderate. They walk with a slow step, rest long and often when tired, and placing no value on time they do everything leisurely and to suit their convenience.

Worms in the intestinal canal are not, so far as my observation has extended, of usual occurrence. The children of the mission, who numbered more than sixty, were entirely exempt, and no case of the existence of worms among the native population came to my knowledge. One individual, a native of this country, who had been for several years a resident of the islands, was affected with ascarides, and this was the only case I met with.

Malaria. Before going out to the Sandwich Islands, I spent several years in our southern states, much of the time in the low country of South Carolina; and was, during the hot seasons of the year, accustomed to recoil at every standing body of water, on account of the poisonous exhalations which they there emit, endangering the lives of every individual exposed to their influence. On my arrival at the islands, I more than once made the inquiry, "why the numerous kalo ponds are not productive of sickness." Thousands of acres are entirely converted into ponds of standing water in which the natives cultivate their kalo, while their houses are built on the narrow spaces between. These are never dry, and are often so numerous as to exhaust entire rivers in keeping them filled. I could not at once reconcile my mind to the belief of their innoxious tendency, notwithstanding circumstances are such as to make the fact very obvious. Though the ponds are subject to the perpetual influence of a torrid sun, they cannot become putrid by reason of the continual supply of fresh water, and multitudes of fish live and thrive in them, such is their freshness and purity.

The streams originate from springs and rain on the summits of the mountains, pour down their sides with great impetuosity and after a few meanderings are turned aside from their courses to irrigate the lands and replenish the ponds, or are discharged directly into the sea; and I know of no body of water emitting sufficient miasma to create sickness along its borders. I have occasionally met with stagnant ponds, which emit a foul and offensive odour, and could in no way satisfy myself of the reason for the exemption of the inhabitants along their borders from fevers, but by supposing the effluvia to be diluted and rendered inert by the continual currents of winds.

Small marshes abound but are fed by springs, and the pure mountain streams, and are thus prevented becoming noxious. They

speedily dry up during a few weeks absence of rain; and the rivers also disappear unless kept alive by frequent showers, and the small pools, which remain at such times and which abound after every rainy season, do not become sufficiently putrid to exhale a *fever-generating* miasm.

If any one variety of *soil* has a specific power to produce malaria it does not appear to exist at those islands. The upland soil is there formed of decomposed lava, the lowland plains along the sea are constituted of a mixture of alluvion washed from the mountains, and decomposed coral. Its immunity from noxious exhalations is the same, whether parched with drought, or merely moist, as when the evaporation is most abundant, after the rains.

The habitations of the natives are for the most part considerably scattered, but are in a few instances crowded together in such numbers as to exhibit the dense appearance of our large towns and villages. There is, however, throughout an entire exemption from those pestiferous exhalations which, so extensively, poison the atmosphere of populous places in hot climates. All animal and vegetable substances thrown away by the people, or cast up by the sea, are quickly devoured by the multitudes of starving dogs and swine, so that no detriment is experienced from their putrefaction.

With so entire an exemption from the existence of miasmata, there is also an entire exemption from those affections induced by it. Malignant bilious fevers do not occur, and as I shall, hereafter, have occasion more particularly to state, derangements of the liver and biliary organs do not prevail, neither is the stomach and intestinal canal, and other organs of the abdominal viscera subject to the numerous and complicated affections so common in every miasmatic region.

Having enumerated several causes which do not operate to affect diseases at the Sandwich Islands I shall next state some particulars of a cause which operates more extensively than any other morbid agent, and produces probably more than one-half of all the diseases which exist, and more than three quarters of all the idiopathic fevers at the Islands.

Cold. The dwellings of the native population are merely slender frames of posts and poles tied together with strings and covered only with thatch. They are generally small, often so low as not to admit of standing erect within, and in their best condition serve as an imperfect protection from the wind and rain and the excessive heat of a vertical sun. Every atmospheric change is quickly felt. Cold and dampness easily penetrate, and no sooner exist without than they are felt within. Add to this, their leaky condition, the almost naked state

of the inhabitants, their common practice of sleeping at night on the bare earth, outside of their houses, and their habits of continuing long in the water and exposing their bare bodies to strong currents of wind, when overcome with heat and covered with perspiration, and it will not be surprising that diseases incident to such causes should abound. Fevers, induced thereby, are hence numerous. They, however, are commonly simple in their type, and may often be relieved by merely restoring the skin to its healthful action.

Ophthalmia, of the purulent form, abounds in every portion of the group, and opaque corneas and thickened coats of the eyes, are very numerous. The old and the young are alike affected by the disease; very small children are occasionally met with nearly blind from its effects. I at one time attributed its prevalence to the effects of the clouds of sand often raised and blown about with great violence by the strong trade-winds; but finding it equally common in those districts where frequent rains prevent the dust from ever rising, there appeared to be no other cause so active as the trade winds, which are constantly prevalent, and come mingled with salt spray.

Pulmonary diseases. Sudden and severe atmospheric vicissitudes, the main exciting cause of pulmonary affections, do not occur at the Sandwich Islands, and with the accommodations for protection and comfort which are possessed in every civilized land, diseases of the respiratory organs would be far more rare. Such, however, are the habits and practices of the people, and so exposed are they to the influence of every atmospheric change that *asthmas* and *catarrhs* in particular, are of very frequent occurrence. The latter, are, however, usually mild in their character, ephemeral in their existence, easily yield to remediate applications, and rarely pass into the more inveterate and fatal stages of pulmonic diseases. Another very prevalent cause of the production of *asthma*, is a habit among the chiefs and wealthier portion of the common people, of inordinate eating, amounting even to gluttony. Their capacious stomachs are distended not less than four or five times a day with truly surprising quantities of flesh and poi; in connexion with this their indolent habits, their aversion to mental or bodily efforts, and their practice of sleeping often, produce a gross appearance of their persons, an extreme corpulency of their systems, and powerfully predisposes them to apoplexy also, and the acute forms of other diseases. This class of the population is not however large.

Rheumatism is of very frequent occurrence, notwithstanding the very prevalent belief, that "it is almost peculiarly a disease of cold and variable climates, and is rarely met with in warm and more uni-

form latitudes." Indeed there is so much similarity in the customs and habits of savages in all portions of the torrid zone, that I can see no reason why the Sandwich Islanders in particular should be affected with rheumatism, and am irresistibly led to the conclusion, that it is equally prevalent at the adjacent islands, and at all places throughout the intertropical regions, where the same exciting causes exist. The disease is usually mild in its attacks, soon passes off even without the application of medicinal means, and is seldom followed by severe secondary effects. Gout might be expected to be common as a consequence of the gross and intemperate habit of eating practiced by the chiefs; but the mild quality of their food is not suited to promote a gouty diathesis.

Venereal diseases. If it be a fact that the aborigines of America were affected by syphilis and gonorrhœa before Europeans visited them, or if, as is presumed by Dr. Thompson, "syphilis has been thousands of times generated *de novo* by impure sexual intercourse," it is certain that neither disease existed, or was known at the Sandwich Islands before the visit of Captain Cooke in 1779. The natives had ever lived in the practice of promiscuous and almost unrestrained sexual intercourse, so that the women were often unable to designate the father of their children; still their practices were not attended with those consequences which follow the licentious in all civilized countries. Those who have the credit of the discovery of the islands, and of exhibiting first to the astonished gaze of the simple and ignorant natives, some of the ingenious and useful implements and commodities of enlightened lands, and who sailed in ships so enormous in size as to have been regarded as floating islands, inhabited by supernatural beings, must also receive the credit of having introduced among these islanders two of the vilest and most loathsome diseases ever sent as a punishment for transgression. And upon the same page on which is recorded the benevolent efforts made to improve their condition and circumstances—the friendly interference to reconcile contending parties and stay the desolating ravages of war and effusions of blood; and the liberal donations made in return for the boundless hospitality and princely presents received from the natives; let it also be recorded that they entailed on their benefactors, a disease which has "grown with its growth and strengthened with its strength," which has extended its course with destruction and death, till all portions of the group have become infected, and countless multitudes have fallen victims to its power.

With such an introduction, the venereal disease has for the past fifty-seven years continued to spread and increase; perpetuated and

extended too by almost every vessel which touches at the islands, till words would fail to express the wretchedness and woe which have been the result. Foul ulcers, of many years standing, both indolent and phagedenic, every where abound, and visages horridly deformed—eyes rendered blind—noses entirely destroyed—mouths monstrously drawn aside from their natural position, ulcerating palates, and almost useless arms and legs, mark most clearly the state and progress of the disease among that injured and helpless people.

I have seen more than one case of marasmus induced by the difficulty of mastication and deglutition. The mouths of these patients were almost closed in the process of cicatrization, and the gums and fauces were destroyed by ulceration. In one of my patients suffering with the secondary symptoms of the disease, in which I was successful in stopping its progress by a mercurial course, the external nose had entirely disappeared, and its place was occupied by a concavity and a foramen of an irregularly oblong form. The left eye was totally blind, and both so disfigured by ulceration as almost to lose their identity. The mouth was shockingly deformed; the lips and alveolar processes mostly removed by absorption, and the teeth having their necks and a portion of their roots divested of integuments, were irregular in their distances and positions, pointed in every direction, and but slenderly adapted to the purposes of utility. The whole countenance was much disfigured by deep eschars, and the body greatly emaciated; no food could be masticated by him, so bad was the condition of his mouth.

The reflection is melancholy, that there is no prospect of this disease, so disgusting in its effects and destructive in its course, being soon eradicated. The natives possess, among themselves, no curative means which will control it. But a small portion have ready access to foreign physicians, and many within reach appear too indifferent to their condition to make application, while most permit the disease to go on till secondary symptoms appear before they seek assistance. These circumstances together with their prevailing and inveterate habits of promiscuous sexual intercourse, will serve still, to perpetuate and extend the disease.

Diarrhœa and dysentery have besides the usual exciting causes which prevail in most places, an additional fruitful source, in a blind and barbarous practice of using immoderately the most powerful and drastic cathartics. The inside of the calabash (*Cucurbita lagenaria*), triturated seeds of the castor oil, the fruit of the candle nut, (*Aleurites triloba*), two or three species of *Ipomeæ* and some other drastic articles are given in such doses as sometimes to create the most obstinate and dangerous dysenteries. I have known a case in which the average

operations of four cathartics, given to disperse dropsy, were twenty-one, the aggregate eighty-four, and another case in which a man from a fear that he would be sick, took such an enormous dose of the calabash as to produce a hemorrhagy which proved fatal within a few hours.

Cutaneous diseases and Scrofula. Though the Sandwich islanders are remarkably fond of the water and are fastidiously particular in their practices of washing and bathing, they are, nevertheless, extremely filthy and squalid in many of their habits of life. With their beasts and fowls in the same habitation, and not unfrequently on the same mats with themselves, their often repeated ablutions will be regarded as timely. The kapa or native cloth used by the inhabitants is worn without cleansing till having become foul with dirt and vermin, and too ragged to serve longer the purposes of covering or protection, it is lain aside. Hence diseases induced or exacerbated by such causes have at those islands a fruitful soil and flourish luxuriantly. The *itch* is extremely prevalent, and often assumes a virulence unseen in this country, the pustules sometimes becoming confluent are converted into large and troublesome ulcers. Other scabious affections exist. *Scrofula* is not only frequent but extremely malignant. The difficulty of inducing a salutary change in the habits of the people, has rendered hopeless the expectation of effecting its entire cure.

Hepatitis. The frequent occurrence of hepatitis in hot climates is ascribed by Dr. Saunders and others to the prevalence of a peculiar miasm in those regions, and if this be true, hepatitis will not be expected to predominate at the Sandwich Islands, where there is no evidence of the existence of any miasm whatever. Indeed hepatic disorders are not merely uncommon there, but they do not appear to be incident to those seas.

The Pacific is thronged with American and English whaling ships, which cruize from three to four years, and as they change their ground to the north or south of the equator, with the change of the seasons, they are continually exposed to the hottest latitudes, and are much of the time within the torrid zone. Of these, a large number touch semi-annually at the islands for supplies, and though my practice among the seamen has been extensive, I have been called to prescribe for only two or three cases of inflammation of the liver, and in no instance have I met with the disease in its acute form. The heat to which the sailors are subjected during calms at sea, is often intense; and if the existence of hepatic disorders is owing mainly to the close sympathy between the biliary and perspiratory organs, the etiology proposed by Dr. Johnson, I certainly ought to have met oftener

with it. I introduce this digression because it agrees fully with my experience and observation among the native population, and accords with the view that heat is not sufficient of itself to induce hepatitis.

No place can be found more exempt from biliary diseases than these islands, and yet the sun is vertical twice each year, and the heat is perpetual. Such also is the belief of Dr. Judd, my medical associate, who has been a resident more than eight years, and whose means for observation have been ample. Two or three gentlemen of the mission, who had chronic diseases of the liver when they went to the islands, have not only spent several years without any exacerbation, but one of them is quite relieved of the complaint. Among the natives I had no evidence of its frequency, though Lahaina, the place of my residence, contains a population of from three to four thousand. The island of Maui on which it is situated, has more than thirty thousand inhabitants. I was the only physician among them, and had numerous patients from the adjacent islands, Hawaii, Molokai and Lanai.

The fine rows of *teeth* possessed by the natives will attract the notice of every stranger. The oldest inhabitants have generally their teeth in perfect order, except such as they have knocked out from time to time, on occasions of the death of chiefs or of their friends. The reasons are obvious: they make no use of acids or other substances which tend to effect rapidly the destruction of the enamel; they are free from those diseases of the stomach and of the nervous system which operate most actively in producing carious teeth; and they rarely eat their food while hot, and the water which they drink is usually no colder than that of our rivers during the heat of summer.

Surgery. Having among them no *rail-roads* or *steam-boats* or machinery of any kind to cause fractures and contusions, and being surrounded by few of those causes which produce accidental injuries, operative surgery is less frequently brought into requisition than in this country. The extirpation of tumours employed the scalpel oftener than all other cases, and occasionally an incurable ulcer or other cause rendered amputation necessary.

Diseases of Females. The females mostly marry before the age of puberty, and but few pass the first catamenial period without having had sexual intercourse; and the opinion is prevalent that the menses are the effect of coition, and their appearance in an unmarried girl is regarded as evidence of illicit conduct. This universal practice of premature sexual intercourse, is probably the principal cause of unfruitfulness among the women. How far they are affected by the venereal disease, is not certain. Multitudes live childless, and cases

are rare of a woman's giving birth to more than four or five children. *Fluor albus* is universal, and exists abundantly in its worst forms; uterine hemorrhage is frequent and obstinate. *Displacements of the womb* are of common occurrence.

In parturition the women are not specially favoured, but suffer *equally with the labouring class of females elsewhere*. In this assertion I believe that I am opposed by the general opinion of the medical profession. Uncivilized life is regarded by the highest authorities as peculiarly favourable to women in child-birth. Cases are stated by them, "of the barbarian female turning aside from her wandering tribe to some secluded spot, delivering herself, and after bathing herself and her new-born infant in the pure stream, overtaking her companions and pursuing with them her course." All this may have occurred, and every accoucheur of experience must have had cases nearly parallel. On this subject, however, I believe that further information is needed, founded on more correct and extensive observation. I draw this conclusion from my own experience, in a situation peculiarly favourable for observation. The females of the Sandwich Islands have every advantage from the relaxing influences of a hot climate, great simplicity in diet and habits of life, and constitutions invigorated by free and unrestrained exercise. I have indeed witnessed, among them, labours in which the parturient and after pains seemed not to exceed the same in the brute creation; and I have also had my severest cases of midwifery among them. In several instances the uterine and vaginal rigidity has been excessive, and the suffering severe and protracted. Their midwives can do nothing in preternatural labours; and in mal-positions of the foetus, the woman dies unless delivery can take place by spontaneous evolution.

Diseases of Children. The ignorance of parents, and their frequent indifference to the comfort of their offspring, subject them to a great amount of unnecessary suffering and disease, during the period of infancy and childhood. The only covering provided for them is merely a fold of kapa. This is ordinarily all that is needed, but being wrapped loosely around them, they may at any time divest themselves thereof and become exposed to the full influence of the severest atmospheric change; and if this happen in the night, the sluggish parents either wrapt in deep sleep, or averse to moving during the hours of darkness, suffer their helpless little ones to lie, benumbed with cold and exhausted by crying, till morning at length comes to their relief. Catarrhs, asthmas, and particularly fevers, are hence abundant, and the seeds of numerous future diseases are, doubtless, laid at such times.

Their cleanliness is also greatly neglected. An occasional immersion at mid-day is perhaps the only ablution performed, and the constantly accumulating filth over the surface of their bodies, subject them to the prevailing cutaneous diseases and scrofula; while the folds of their joints, the nates and vagina being so much neglected, are extensively affected with excoriations and ulcers. Add to these the practice of feeding them with the crudest and most indigestible food nearly as soon as born, and it is a matter of wonder that so many survive the infantile discipline.

Medical Views and Practices.—Did they possess sufficient dignity and importance, I might detail some of the medical views and practices of the natives. Suffice it to say they are made up of a mixture of absurdities the most ridiculous, and often dangerous.

The native medicines have, some of them, value, were they skilfully employed; but, used without principle or judgment, they are, as has been already stated, often the means of irremediable injury.

Charms and incantations have a conspicuous place in their therapeutics, and often lead to practices the most shocking. Many have been pounded and roasted to death from a belief that their diseases were the effect of an indwelling spirit. Nor is it in all cases needful that the patient should be actually suffering with disease; the mere apprehension of future sickness is sufficient reason for having recourse to remediate measures, and truly fortunate is he who has sufficient strength of constitution to withstand the baneful influence of their more drastic doses.

Population.—When Captain Cooke visited the Sandwich Islands in 1779, the population was estimated, and probably with correctness, at 400,000. According to a late census there are now about 135,000, making a decrease of 270,000 in the space of fifty-seven years; and it is computed by the Rev. W. P. Alexander, one of the missionaries, who has with considerable pains ascertained the births and deaths of a large section, that there are annually 6838 deaths and 3335 births on the group, making more than twice as many deaths as births. If this be correct, it will not seem incredible that the population should have so greatly diminished, and that, too, in so short a period. And it will further appear that not many years will be required, at this rate, to depopulate the islands of the native inhabitants.

The causes of this decrease are too numerous to specify, but some of them may be enumerated.

Captain Cooke found the Sandwich Islanders living, like all savage people, in habits of the greatest simplicity, seeking only the supply of their necessary wants; and in a climate requiring so little clothing,

and with a soil producing spontaneously so many of their articles of consumption, that but little labour was requisite to satisfy every desire. They were then unacquainted with the infinite multitude of unnatural wants and practices which deteriorate mankind in all civilized lands. They were a hardy and athletic people. The process of alcoholic fermentation was indeed well understood by them, and they could make intoxicating drinks from a variety of vegetables, but they had not used them in such quantities and so frequently as to make drunkards of themselves. The reasons of this devastation must then be looked for on the catalogue of changes and innovations introduced from abroad; and to the influence of visitors from enlightened and civilized countries, chiefly from England and the United States, are to be attributed the great alteration in the native character, and this appalling diminution of their numbers. During the past fifty-seven years, the time since their first discovery, we ought, after making every allowance for losses by their wars, to find the population increased at least one-half. But instead of 600,000 there are now only 135,000, leaving an actual loss to the nation of 465,000 inhabitants, chargeable directly to the customs and vices carried there from other places.

The venereal disease has destroyed its thousands, and by its influence in inducing barrenness of the females, has probably prevented tens of thousands from ever seeing the light.

The introduction of alcoholic liquors has produced its accustomed amount of wretchedness and misery, and consigned great numbers to untimely death.

The use of tobacco has evidently a deleterious influence on the natives, whatever may be its effects on others. In smoking, the natives do not sit down deliberately and finish a cigar or a pipe, but take one or two *quiffs*, inhaling the full volume of smoke directly into the lungs, and retain it there as long as the breath can well be retained. Individuals have been killed by its effects, and how much disease may have been induced or exacerbated thereby remains to be ascertained.

The large quantities of foreign commodities carried to the islands, and the increasing intercourse of the inhabitants with foreigners, have created such an amount of new and superfluous wants as to destroy their native character, and to make of them an artificial and degenerate race.

The introduction of Christianity within the past few years has exerted its usual benign influence, but the changes of every kind have nevertheless been great and rapid, and the people have fallen and are

continuing to fall under the effects of these changes; and their end may be read on the same page which records the fate of the wandering tribes of America. Such must inevitably be the case, unless a kind Providence greatly bless those measures used for their present and future interests.

The Sandwich Islands as a resort for individuals predisposed to, or affected with, Pulmonary Diseases.—As a residence for consumptive patients, two circumstances will here require attention: the voyage to the islands, and the residence there.

A passage to the islands may now be obtained at almost every season of the year. Merchant ships bound directly there, or to touch there on their way to Columbia river and the north-west coast, frequently sail from our cities; and whaling ships are continually leaving for the Pacific, more particularly in the fall, and many of them, without delay, make their way directly to the islands—opportunities will therefore be sufficiently frequent. The voyage occupies from four to five months; and by leaving this country in the fall, Cape Horn is doubled in the season the warmest at that place. Still, however, the latitude is so high, that the cold, even at that season, is severe; and, amid storms of snow or islands of ice, and furious gales of wind, it may be necessary to spend many weeks in beating around. Another route, much shorter, and on many accounts preferable, is to sail for Vera Cruz, and cross the isthmus with one of the caravans continually travelling there. Numerous trading vessels pass and repass from the western coast to the islands, and would afford a passage. The whole route may be made in two months, should a vessel be ready to sail from the isthmus; but as that would be uncertain, a considerable delay might be caused in waiting for one. As, however, the place of detention is within the tropics, almost on the equator, the climate could not be an objection to a short residence there.

On arrival at the islands, the climate will be found, as has been already stated, extremely pleasant and equable, *and not surpassed in salubrity by any in the world*. Indeed, what place can be found more uniform?—the thermometer, during a space of ten years, not having varied more than thirty-two degrees; and where no day during the same period has a variation of more than nineteen degrees; where the same clothing is found comfortable the whole year, and where no other regulator of the temperature is needed than simply to open or close a window. I have reference here to the western sides of the islands. The eastern or windward sides, receiving the continued influence of piercing trades during the cooler season, some additional protection is needed.

In further confirmation of the salubrity and healing influence of the climate, it may be remarked that several of the members of the mission have entered the field with pulmonary affections, who were regarded as doomed to certain and premature death if they remained in this country, who now enjoy good health, and are entirely free from any abiding symptoms of disordered lungs.

Accommodations, recreation, &c.—There are scattered over the group probably five or six hundred foreign residents, of whom at least three-quarters live at Honolulu, on the island of Oahu, (Waohoo of Cooke.) This place has a population of six or seven thousand inhabitants, is laid out with some regularity as to streets, and has a considerable number of buildings, very respectable for size and appearance. The houses of the natives are mostly constructed after their own style—upright poles covered with thatch. There is a neat chapel, in which there is preaching twice every Sabbath by an intelligent American clergyman, and in the same building are a public library and reading rooms, well supplied with the various periodicals.

Several American and English gentlemen have their wives and families with them, and there is constituted a small circle of refined and intelligent society. There are also several physicians—men of skill and intelligence. Boarding may be procured, with the comforts, and even luxuries and elegancies of life. Gentlemen can get comfortably accommodated for six or seven dollars per week, and plain board may be had for three or four dollars a week.

The market is well stocked with beef, pork, fowls of different kinds, fish, oysters, milk, and a variety of excellent culinary vegetables. Fruits also are abundant and cheap, such as melons, bananas and pine apples; berries and some other fruits are plenty in their season.

The means of gestation are abundant. Good horses and carriages can be procured, and the natural scenery is grand, inviting the lovers of nature in every direction. The harbour is well furnished with boats of every description, and vessels are continually sailing from island to island, and furnish pleasant excursions to the volcano, or elsewhere. A constant communication is also kept up with other portions of the world by vessels entering and leaving almost every week.

Honolulu is more particularly noticed here, because it is the only place on the islands where comfortable accommodations can be procured. Lahaina on the island of Maui, and Kailua on Hawaii are both more favourably located as to climate, and are not subject to the force of the trades.

The invalid will not look for sources of improvement or edification among the native population. He will there find a strange language,

an unenlightened population and barbarous customs. If, however, he possess benevolent and philanthropic feelings, he may find any amount of employment in the laudable work of promoting the improvement of the natives.

Of the sources of gayety and dissipation, I have nothing to say. Neither will be recommended to the invalid seeking restoration to health. But no stranger residing at the Sandwich Islands need suffer for want of recreation or employment:

In concluding my remarks, I must distinctly state, that I do not take upon myself the responsibility of recommending unqualifiedly the Sandwich Islands as a resort for consumptive invalids. The long voyage, and other circumstances, will render the project in most cases doubtful and often out of the question. I merely offer them to the consideration of such as they may specially concern, and leave it to such persons to judge of the attention they may deserve.

ART. V. *Worms in the Urinary Bladder, simulating Stone in that Organ.* By A. BRIGHAM, M. D.

SOME time during the past summer I was requested to visit Mrs. More, a married woman, aged thirty-five, living at Hartland in this state, for the purpose of removing a stone from her bladder. On inquiry I found there was no absolute certainty that she was afflicted with a calculus, though she had the symptoms which attend that complaint. Her medical attendant, a highly respectable physician of Hartland, had very frequently drawn off her water by the catheter, but had never actually felt a stone, though he was confident that at times he had felt some unusual substance, and supposed it to be a stone.

When she arrived in this city I learned from herself that she had been troubled for several years with difficulty of passing water, sometimes the difficulty was trifling, at others very great, producing great pain, fever, and often requiring the aid of the catheter. For the last six months she was compelled to have recourse to the catheter as often as once in every forty-eight hours. On sounding her, I could discover no stone, but was confident I felt some unnatural substance or tumour at the upper part of the bladder, though after repeated examinations I could not determine its nature or extent. I assured her there was no necessity for an operation, and as the secretion of urine was scanty,

directed a diuretic mixture, and requested to hear from her again in a few weeks.

About one fortnight after this, I received a letter from her physician, stating that Mrs. M. was entirely well,—that she had passed from her bladder with considerable pain, *a round white worm about six inches long*, and from that moment her complaints ceased.

She now says, though she did not mention it before, that when she was fourteen years of age, nearly a year after having had typhus fever, she was troubled with a difficulty of passing water, and then discharged a small worm about an inch long from the bladder, and in six weeks after another of the same size, which entirely removed her complaint at that time. For about four years she had no return of the difficulty, but since then,—the year 1819—to the present year, she has been afflicted with it, though not until the latter part of the time has it been very severe.

In the second volume of the Medico Chirurgical Transactions, there is a somewhat similar case, detailed by Mr. Lawrence, and drawings of the worms given. In this case, however, several hundreds of worms were discharged from the bladder, some of them quite small, others from four to six inches in length.

Are not such cases more frequent than is generally supposed? Every practitioner of much experience must have been occasionally perplexed with cases, occurring in females, of great difficulty and pain in passing water, and other symptoms indicating stone in the bladder, but which symptoms finally disappeared, and without his knowing the cause of their removal.

I know not of any certain remedy for such a complaint. In the case related by Mr. Lawrence, the urethra was partially dilated, after the existence of worms in the bladder was accidentally ascertained by one passing the urethra; and oil of turpentine was injected into the bladder, and large doses of this medicine was administered to the patient, but without any very decided benefit, though the injections were thought to rather expedite the passage of the worms. In the case of Mrs. M., I attribute the removal of the worm to the disturbance of it by the repeated and thorough examination of the bladder which I had made a few days before it passed.

Hartford, January 4, 1837.

ART. VI. *Reports of Cases of Insanity, treated at the Friends' Asylum near Frankford.* By CHARLES EVANS, M. D. Attending, and R. R. PORTER, M. D., Resident Physicians.

CASE I. *Moral Insanity, not hereditary—duration seven years—cured.*—E. P. of Delaware County, unmarried, ætat 30 years, carpenter by trade; came under our care April 10th, 1832; had been in the Asylum several months previously.

April 26th. Physical condition.—Stature medium; complexion fair; eyes blue; hair light brown; muscles well developed, firm, and in some parts rigid. Head unnaturally warm, and he complains of “a constant unpleasant sensation” in it. Conjunctiva slightly injected; tongue white, perfectly smooth and moist, looks as though covered with white paint, red at tip. Pulse quick and corded. Epigastric region tender upon pressure, muscles of belly very rigid, bowels costive, feet cold. At times very restless, walking quickly from place to place, and apparently unable to keep still: at such times the eye is preternaturally bright.

Moral phenomena.—Constantly unhappy and complaining, affection for his relatives and friends destroyed. Passions easily aroused, and when excited altogether ungovernable, requiring him to be forcibly restrained. Unwilling to follow his trade or perform any kind of work. No hallucination, and is conscious that his conduct is violent and irrational, but alleges inability to restrain or control the impulse to action. Has repeatedly, without provocation, struck and ill-treated his nearest, and those who had been his dearest friends, and expresses a fear lest at some time he shall take the life of some of those who are about him. His friends state that his natural disposition was quick and ardent, but affectionate and amiable; his habits regular and industrious, and that the alteration was first observed immediately after a severe attack of fever, and has been manifesting itself more and more ever since. During his sickness he has been repeatedly under medical treatment consisting principally of bleeding and purging, and he is in the habitual use of drastic purgatives to overcome the costive state of the bowels; has observed no selection in his diet, and is fond of strong food.

29th. Complains of some pain in his head, and that he is liable to unpleasant dreams. Apply cups to back of head, and give shower bath before going to bed.

May 7th. Appears considerably excited, head hot, tongue as be-

fore, pulse quick, feet cold, tenderness in epigastrium considerable, bowels have been opened by small quantities of magnes. sulph. Ordered him to be cupped two or three times a week over the stomach, mustard pediluvium at bedtime, and to wear socks dusted with Cayenne pepper. To be kept quiet and his diet to be restricted to arrow root and gruel.

10th. Has been cupped twice as ordered; says his head feels much relieved after the abstraction of blood from over the stomach, tongue as heretofore, head warm, feet cold. Continue treatment last prescribed.

19th. Has his passions more under control; says he feels much better; pain in head nearly gone; tongue still white in patches.—Continue treatment.

June 2nd. But little change since last report. Tongue cleaning slowly. Continue the same treatment.

12th. Little change since last report. Head too warm; pulse about 80; tongue retains its painted appearance, except along the edges, where there is a disposition to clean manifested; bowels again costive. Discontinue cups over stomach and apply them along the spine. Continue other treatment as heretofore.

26th. Has improved considerably, not so easily excited as formerly, converses affably, and is disposed to employ himself. Head pleasantly warm, tongue cleaning slowly, pulse nearly natural, bowels soluble. Renew cups over stomach once a week and continue low diet, pediluvium, &c. as heretofore.

July 5th. Pulse too quick, about 80, and full; slight “uneasy sensation” in head; tongue as before; bowels regular without medicine. Apply cups behind the ears.

14th. Has lost $\frac{3}{4}$ xv. of blood from the back of head by two cuppings; says he feels better. Tongue coated, but the papillæ more distinct; other symptoms as before. Continue treatment as before ordered, viz: cups occasionally over stomach, stimulating pediluvium, low diet, &c.

21st. Complains of occasional “uncomfortable feelings” in head. Pulse nearly natural, tongue clean along the edges, bowels regular. Says he feels entirely different from what he did when his treatment commenced. Establish an issue behind each ear, and continue other treatment. Let him have the common vegetable diet of the house, and employ himself about the premises.

August 7th. Issues nearly healed, tongue almost clean, head cool and clear of unpleasant feeling, bowels regular without medicine. Re-open issues with caustic. Apply cups over stomach whenever

pain upon pressure, or the state of the tongue indicates irritation therein, continue stimulating pediluvium, &c.

21st. Continues improving, says his head is much better, tongue nearly clean and the papillæ distinct, bowels regular. Keep up discharge from issues. Let him have small portions of animal food.

September 6th. Exhibits very few marks of disease; head cool, tongue clean, pulse soft and slow, bowels regular, appetite good. He is gradually employing more of his time in his mechanical occupation, and in assisting about the premises. Affection for relatives restored.

29th. Discharged cured.

Remarks. In the pathological view of this case, it is worthy of remark, the close connexion exhibited between the affection of the brain producing the disturbance of the mental functions, and the diseased state of the stomach and bowels. Which of the two lesions had priority as regards time it is impossible for us to determine, but it is most probable that the attack of fever which ushered in the moral insanity, left both brain and stomach enfeebled or diseased, though the sensibility was not sufficiently excited at the time to produce pain. The patient, it appears, returned at once to his ordinary diet, and to obviate the sluggish action of the digestive apparatus resorted to drastic purgatives, in the use of which he persisted up to the time when placed under our care. The irritation produced and fed by these causes being transmitted to the brain, a mutual re-action between the organs was kept up until irritation was converted into inflammation in the mucous membranes of the former, as indicated by the state of the tongue, and tenderness of epigastrium; and it acquired such intensity in the latter as to disturb the manifestations of mind, and overthrow the original moral character. From this state of the brain arose the "uneasy sensations" in the head complained of by the patient. The heart and arterial system were sympathetically affected, and hence the accelerated pulse, and irregular circulation as shown by the hot head and cold extremities. Under this view of the case the obvious indication was to abstract from the diet every thing calculated to keep up inflammation, or requiring laborious digestion, and to overcome the existing phlogosis of the stomach and bowels by topical bleeding. The patient, in the early part of the treatment, always found relief from the pain in the head, by the application of cups over the stomach. Afterwards it became necessary to apply remedial means more immediately to the seat of the disease in the brain.

CASE II. *Moral Insanity—Duration sixteen years—Death—Autopsy.* This patient was admitted into the Asylum several years before she came under our care; and we have found considerable diffi-

culty in ascertaining the few facts relative to the early history of the case.

At an early period she gave evidence of uncommon intellectual qualifications. She appeared to mature while young, and at sixteen years of age, was universally regarded both by her relatives and acquaintances as a model for imitation in conduct and manners. Though generally enjoying good health, her form was delicate, and her temperament nervous. When in the seventeenth year of her age she suffered an attack of fever; upon recovering from which, a great change was observed to have taken place in her whole character and disposition. From being modest and retiring, cheerful and easily pleased, industrious, and even ardent in the performance of her domestic and social duties, she became taciturn and melancholy, and perseveringly refused to aid in pursuing any plan which her friends devised for her restoration or amusement. No further than this, however, was there any evidence of a loss of affection for her relatives; but after a lapse of several months, another, and not less radical change, took place in her character and demeanour. Without any apparent cause, she suddenly became talkative, and even boisterous; lost all proper reserve; exhibited the utmost levity in her conversation, and appeared bent upon exercising the whole powers of her mind, (evidently not impeded in its operation by former disease,) either in almost uninterrupted conversation upon the most frivolous and outré subjects, or in giving vent to undeserved reproaches and unkind sarcasm upon those who had been her dearest friends. She now lost all affection for her parents, brothers and sisters, and began to exercise over the latter, who were her juniors, the most capricious tyranny, not unfrequently enforced by blows and other means of offence. She had, however, the art so effectually to conceal the evidence of this course of conduct towards them, as totally to deceive the parents, and render them for a considerable time unwilling to give credit to the representations of her violence. As during the whole course of this extraordinary conduct, there was no hallucination, and she at times appeared keenly sensible of, and deeply to regret, the impropriety of her behaviour, her friends could not believe her insane; and every means was resorted to, both at home and abroad, which suggested the least prospect of effecting a change. After a lapse of six years, all other measures having proved unavailing, she was placed in the Asylum. She remained in the institution two years, and was then so much improved that her friends deemed it advisable to take her home, where she conducted herself with considerable propriety for some time; but finally relapsed into her former condition,

and was returned to the Asylum in 1830, after an absence of two years.

The following is descriptive of her situation when she first came under our notice.

Physical condition. Stature medium; form symmetrical and well proportioned; features regular; hair dark brown; eyes hazel; complexion fair; skin soft; motion quick. Posterior part of head unnaturally warm; tongue slightly furred; pulse about 80; general temperature of body natural; digestive functions healthy, but her appetite precarious, sometimes voracious and again nearly lost; sleep light and disturbed.

Moral phenomena. All the intellectual faculties unimpaired. No hallucination; capable of reasoning, comparing, and judging upon all subjects as well as ever. Spirits high; manners forward, especially when in company with men; perpetual loquacity, quick in repartee, and acute in her remarks; irascible, obstinate and perverse, always upon the lookout to annoy the other patients, and render them dissatisfied with their situation or attendants; sarcastic, and a great disposition to turn every thing into ridicule. Affection for relatives and former home destroyed. In conversation it appeared as though her faculties were too active, and not obedient to the will, for after running on in the most extravagant strain for some time, uninterrupted only by bursts of laughter, upon being remonstrated with, she would reply, "Well, what shall I do? I cannot help it; when I once begin, I cannot stop."

During most of the time, she enjoyed the liberty of the house and grounds, and was in the habit of riding or walking out whenever the weather permitted; and generally attended at a place of worship weekly.

From the first of March, 1832, up to the sixth of January, 1835, when she was taken with her last sickness, she was sufficiently indisposed to be confined to her bed but three or four times, all the attacks being similar in character, and lasting from four to ten days. The menstrual secretion was always inordinate, the quantity being large, and the period of exemption from the discharge never exceeding three weeks, and seldom more than two.

January 6th, 1835.—This attack commenced as all her former ones. For several days previous to her being confined to her room, she was unusually fretful and ill-natured to all her female companions, constantly moving about the house, and finding fault with every thing around her. The same absence of propriety when in the presence of men, which characterized her former attacks. Head too warm, pulse

quick, tongue thickly coated, nausea, breath highly offensive, no pain, no cough. Ordered mass. ex hydrarg. gr. v., magnes. ust., carb. lign. āā. ℥ss; a tea-spoonful every two hours, until it operates freely; stimulating pediluvium at night; diet, gruel.

8th.—Back of head hot, tongue coated with yellowish fur, breath very offensive, pulse about 90 and soft; no symptom of pain; consciousness apparently unimpaired, but she refuses to speak when questioned respecting her feelings; bowels costive; skin hot and dry. Ordered v. s. ℥x.; and if febrile symptoms are not allayed, cup over stomach; mass cærulean, gr. v., followed by ol ricini, ℥ss.

10th. Has not spoken since first taken to her bed, and it is impossible to obtain any information other than that revealed by external signs; refuses all food and medicine; head cooler, and general temperature of body lowered; pulse, tongue, &c., as before; sleep disturbed. Ordered pulv. ipecac. ℥ss.; after its operation, solution of salts in infusion of senna.

15th.—Still the same. Head hot, especially the posterior part; tongue heavily coated, and the mouth and fauces blocked up with a tough mucous secretion, which she makes no effort to discharge. Breathing hurried, and breath so offensive that it taints the atmosphere of the whole room; bowels costive. Upon percussion, the infra mammary portion of the right lung gives a dull, flat sound, and respiratory murmur is indistinct; no cough. Although her strength appears but little impaired, she hardly moves herself, but remains in the position in which she is placed. Ordered cups to back of head and between the shoulders, and give calomel gr. vi. in ol. ricini ℥ss.; give her milk by means of stomach tube.

18th.—No change to note, except that she spoke to-day in her usual tone and manner to one of her female attendants, but refused to give any account of her feelings; keep bowels soluble, and apply a flannel wet with spts. terebinth. over the chest. Diet as before.

20th. Patient appears conscious of every thing said to, and going on around her, but still refuses to speak, or in any way to communicate her feelings; refuses food and medicine, which are obliged to be forced upon her; will not open her mouth to exhibit the state of her tongue, which is loaded with a thick coat, and the fauces almost blocked up with a glairy tenacious secretion, which she makes no effort to dislodge; breath highly offensive; pulse quick; head hot; skin dry and husky; breathing short and hurried; bowels have been open. Within the last twelve hours she has discharged from the lungs about half a pint of an exceedingly offensive mixture of pus and mucus. With this is the first appearance of cough, which is slight, amounting to

little more than "clearing up." There is a red spot in each cheek, and other symptoms of hectic developed. Ordered bowels to be opened with *ol. ricini*, \mathfrak{z} ss., followed by mild enema; the surface sponged with vinegar and water, and an issue opened below the right clavicle.

22nd. Less difficult to manage, but will not take any thing voluntarily; sputa considerable, the character the same; pulse quick and wiry; bowels open; tongue thickly coated as before; stomach tender upon pressure; issue beginning to discharge. Apply cups over stomach; continue sponging; give sulph. morph. gr. ss. at bed time; diet, gruel.

24th.—Patient is rapidly becoming worse; high continued fever, with a slight hacking cough; expectoration much diminished; head too warm; skin hot and dry; pulse quick and corded; tongue coated; breath less offensive; bowels regular without medicine; takes nothing without compulsion, and neither speaks nor moves voluntarily; sleeps but little; eye mostly fixed; breathing easy, and she is apparently without pain; emaciation going on rapidly; issue discharges well. Give gruel as before, and a table-spoonful of neutral mixture, containing sulph. morph. gr. $\frac{1}{12}$, and tart. antimon. gr. $\frac{1}{16}$, every two hours.

26th.—Fever has very much subsided since the exhibition of mixture as ordered; cough and expectoration much diminished; pulse quick and feeble; tongue shows a disposition to clean along the edges; breath nearly free of fœtor; bowels regularly opened every twenty-four hours, without the use of medicine; discharges healthy; strength much prostrated. Ordered, continue mixture as before. Diet, panada.

27th.—Continues emaciating and losing strength; febrile symptoms much diminished; skin cool; pulse quick and feeble; cough and expectoration nearly gone. She has become much more willing to take her medicines and nourishment. Effusion appears to be taking place in right lung. Ordered a table-spoonful of decoct. *senegæ* every two hours, alternating with the neutral mixture.

28th.—Refuses all medicine, though apparently conscious of her extreme illness, but takes nourishment voluntarily; diarrhœa has come on; pulse very weak; breathing hurried and laborious; countenance indicative of complete consciousness and self-possession. Ordered tinct. *opii*, gts. xxx. in enema. Apply dry cups over the chest, and a blister between the shoulders. Give chicken broth and wine whey.

29th. Patient continued sinking until about 11 o'clock, when she expired, having never spoken but once since first taken.

Autopsy, by Drs. Trimble and M'Crea.—Head. Cranium natural in thickness and density; dura mater natural and healthy; vessels of pia mater and tunica arachnoidea slightly injected, and the membranes reddened; about four ounces of serum effused between the dura and pia mater. Cerebrum, healthy and natural in its appearance; cerebellum, vessels enlarged and engorged, and the posterior inferior portion softened. Pons varolii natural; lateral sinuses distended with coagulated blood.

Chest. Heart natural in size, and healthy. Right lung firmly attached by dense and apparently old adhesions to the side and front of chest; left lung free from adhesions; both lungs highly diseased; inflammation general throughout the whole parenchyma, excepting the upper lobe of right lung; all the lower, and part of the upper lobe of the left lung hepatized; mucous membrane of the bronchi injected, and effusion in the smaller ramifications; no appearance of tubercles or abscess, and no part of the lung gangrenous.

Abdomen. Stomach, mucous coat reddened in patches, and softened; liver hypertrophied, one-third larger than usual size. Other abdominal viscera healthy.

Pelvis. Uterus, parietes thickened, and the substance unusually firm and dense, resembling cartilage; ovaries irregularly enlarged and highly inflamed, one-half of the right one of a dark brown colour, and gangrenous; bladder healthy.

Observations.—Numerous instances are already upon record where disease of the cerebellum has so far aggravated the impulses of sensual appetite, that even in females of the nicest chastity, and most virtuous education, the barriers of modesty and propriety have been broken down, and the unhappy victim given painful evidence that the animal propensities have escaped from the control of reason, and triumphed over the purity of the sane mind. The case of this unfortunate lady adds another to the list. It should ever be borne in remembrance that the conduct of those, thus unfortunately diseased, is no evidence of depraved morals, or of an originally polluted imagination. The state of the uterus and ovaries exhibits the cause of the pain in the side and lumbar region, of which, she frequently complained. The inflammation in these organs was posterior to, and sympathetic with, that of the cerebellum; but being once established, the two were reciprocally maintained. How far the unwillingness to move, speak, or swallow food, was connected with the disease of the cerebellum, it is impossible to decide; but it may be remarked that her resistance to each was always passive.

CASE III. *Moral Insanity—Duration several years—Death—Autopsy.* C. F. æt. 70, of Philadelphia, was admitted in November, 1834. She had been, for several years previously, a faithful domestic in the family of ———. Disposition naturally kind and amiable; habits persevering, industrious, and frugal; by mere dint of economy she had saved from two to three thousand dollars. The first evidence of disease noticed, was a carelessness about money matters, which soon amounted to indifference. Not long after this change, her feelings toward her fellow servants became perverted; she frequently reprimanded and abused them without cause. In the presence of superiors, she often used rude language, and behaved in various ways very unbecomingly; disrespect was soon converted into hatred, which she acknowledged with pain to the family. Finally she begged her protectors to secure her in a place of safety, lest she should commit against them some dark deed of violence, which she at times harboured in her breast. They, not believing she was crazy, reluctantly granted the request.

June 12th, 1835. Emaciation advanced; muscles flabby; skin of a pale straw colour; hair fine gray; eyes hazel; countenance sane; sleeps well; heat of scalp normal; cheeks sunken; no cephalalgia; pupils natural; tongue red, rough, moist, clean; breath offensive; appetite variable; bowels loose; nutrition impaired; has abdominal tenderness; respiration easy; right side of chest too resonant on percussion; pulse about 75, soft, weak. Obstinate, impatient, impious, suspicious. She expresses her wants in a commanding tone; shows no gratitude for favours conferred. Refuses to take food willingly. Diet farinaceous.

July 17th. Sleeps soundly; heat of scalp natural; pupils contracted; tongue red, dryish; pulse 80; skin harsh; feet warm. She either eats voraciously or entirely refuses food; from which cause she suffers frequent attacks of diarrhœa, which are controlled by attention to diet, or by taking small portions of pil. hyd. and opii.

27th. Yesterday dysenteric symptoms were induced, by eating animal food; they were overcome by throwing into the rectum sulph. morph. gr. i.

Aug. 4th. She is much exhausted by an attack of vomiting and purging, which came on yesterday, and continued for several hours. Scalp warm; feet cold; tongue red, dry; face pale; pulse very weak, and frequent; cheeks sunken; pupils contracted; heart's motion indistinct; respiration hurried; ends of the nails crisp, and of a dull colour; abdomen more tender to pressure; has frequent bloody and mucous

discharges from the bowels. Ordered sulph. morph. gr. i. to be frequently thrown into the rectum.

5th. The dysentery continues; drowsy; face pale, cadaverous; mouth opened; lower jaw depressed; respiration short, hurried; skin of hands and feet cold, bluish; pulse scarcely perceptible; pupils much contracted; very restless; importunate for cold drinks; eye-lids drooping. She remained in this state for 12 hours, when she calmly died. Her consciousness was good, nearly up to the time of dissolution; the pupils were contracted till the moment of death, when they became greatly dilated.

Autopsy, fifteen hours after death. Exterior; great emaciation, skin a pale straw colour, pupils smaller than at the moment of death. Scalp thin, temporal muscle wasted to a mere layer, dry. *Cranium* thin, internal table diminished; *dura mater* strongly adherent to the cranium, thickness increased, vascularity about average, little blood in longitudinal sinus. At the base of the brain $\frac{3}{4}$ i. of bloody serum. *Arachnoid* normal. *Pia mater* slightly adherent to the cortical substance; injection moderate. Colour of cortical substance of a dull ash, consistency lessened, not pulpy; medullary portion softened exteriorly; bloody points followed longitudinal sections; by pressure their surfaces soon became coloured; fornix rather softened; corpora striata pale externally; thalami normal; ventricles contained $\frac{3}{4}$ vi. of limpid serum; pyramidal bodies, together with surrounding parts, normal. *Cerebellum* firm.

Chest.—Pectoral portions of ribs ossified. *Lungs* free, crepitant, no tubercles; vesicular emphysema seen over the surface of both lungs. Mucous membrane of bronchi, normal. Heart small, left ventricle increased in thickness and weight, its cavity lessened; valves healthy.

Stomach distended, contained half a pint of yellowish fluid; mucous membrane, near the cardiac region, of a dark red colour, easily raised in strips from a fourth to half an inch in length; greater curvature free from injection, of a dull white colour, consistency good; near the pylorus, mucous membrane reddened and thickened. *Small intestine* externally injected, contained yellowish fluid; mucous coat here and there, throughout its whole extent, injected and thickened; *large intestine*, the mucous membrane in some places thickened, injected, softened, ulcerated or destroyed. *Liver*, size natural, colour externally normal, acini redder than usual. *Gall-bladder* distended with bile. *Pancreas*, size natural, density increased. *Kidneys* firm, normal; ovaries small, hard, compact. *Uterus*, internal structure pale, very compact.

REMARKS. *First.*—We are aware of the uncertainty of inferences

drawn from individual dissections; but the condition of the fornix, in the brain of C. F.; of the cortical and medullary structures, together with the injected state of the same, opposes strongly the assumption, that insanity is essentially a *mental affection*. If the brain is the organ of the mind, as is very generally admitted, we cannot conceive how the latter can become deranged without pre-existing disease in the former. The fact that organic changes are often discovered in distant parts, as well as in the brains of the insane, no more authorizes the belief, that they are of equal importance in the causation of insanity, than do the frequent intestinal lesions observed in phthisis, prove that they are as intimately concerned in the production of consumption, as the pulmonary alterations themselves.

Second.—The lesions found in the stomach and bowels of case III. were doubtless the immediate cause of her death. Insane persons are much disposed to diarrhœa, which at first is easily managed; but as the case is protracted the intestinal inflammation becomes aggravated, and extending downwards, gives rise to dysenteric symptoms, which sooner or later carry off the patient. Dissection, in such cases, very generally demonstrates, that the disease commenced in the small intestines, extended downwards towards the colon, and terminated in softening or ulceration of its mucous membrane. In illustration of the susceptibility of the insane to intestinal inflammation, we remark, that M. Scipio Pinel reported, that in 269 dissections of lunatics, gastro-enteritic inflammation occurred in 51. The reports of the French Lunatic Hospitals, for 1832–3 and 4, ascribed 306 deaths out of 1091, to abdominal inflammations.

CASE IV. *Moral Insanity. Duration three months. Second attack. Paternally constitutional.* Mr. —, of Md., was admitted on the 8th of June, 1836. In the summer of 1832 he was observed to be more than usually restless, discontented, and at times “melancholy.” These changes of disposition were attributed to “nervousness,” or to a morbid “imagination,” rather than to cerebral disease; consequently, medical aid was not deemed necessary till the spring of 1833; by which time he had become “maniacal,” and had made several attempts at suicide. During the incubation of the disease he injured the digestive powers, by an excessive use of medicines, taken for imaginary diseases. This attack was overcome at the Asylum, by the use of the lancet, cups, blisters and tonics. In 1834 and 5, he took a tour of pleasure through England, France and Italy, during which he conducted himself and his affairs to the satisfaction of his friends. On returning home, having no regular business to pursue, he spent most of the time in-doors, reading a few favourite authors.

By constant indulgence the sedentary habits increased, till every duty, requiring corporeal exercise, was disrelished; at the same time he became more and more reserved towards friends, and shortly after all company was studiously avoided. As the disease advanced the fidelity of friends was questioned, and their love repulsed. Fixed delusions now appeared; he thought that he had committed some heinous offence against society, and that he was shortly to be arraigned before a tribunal of justice, to receive condign punishment.

He was submitted to a depleting course of medicine, which lessened the violence of the disease, and converted it into moral insanity; for at the time of his admission there were no delusions of the understanding.

June 11th. Present state.—Stature large, lean; head small; hair red; eyes black; muscles wasted, flabby; motion quick. Sleeps well; no cephalalgia; hair dry, scalp loose; pulsation of temporal arteries weak, regular, 104; pupils sensible; countenance mirthful, face exsanguineous; lips, gums, tongue pale; appetite strong; food relished; digestion regular, no abdominal tenderness; chest, anteriorly very resonant on percussion; heart's motion quick, weak; radial artery 100, weak, small; hands and feet cold. Excessively joyous and merry, acts by impulses without consideration, abounds in comic gestures and antic motions of the body; prodigal in gifts; destroys and soils his clothes; turns every thing in his room topsy-turvy; affection for friends suspended. Ordered full diet, and carb. ferri. ℞ss. t. d.

20th. Sleeps well; heat of scalp normal, greater than that of the hands and feet; pulse in temporal artery quick, soft, 108; lips and tongue pale; pupils sensible; adnata yellow; feet swollen, of a white waxen colour; radial arteries 108, weak, soft; appetite much increased; bowels regular. “More crazy in actions than in words;” when addressed distorts the face, hems, coughs and laughs, then answers correctly; gave a minute and rational history of his travels; indisposed to mental labour. Takes freely bodily exercise in the open air.

27th. Heat of scalp increased; no cephalalgia; pulse in temporal arteries 90; external capillaries filling up with red blood; appetite voracious; nutrition active; rapidly increasing in flesh; countenance at times more grave; more careful of dress; requested that the furniture of his room might be replaced; actions less comical; attention more easily fixed; answers more prompt; less lavish in gifts; the disposition to excessive merriment much diminished.

July 1st. Yesterday after having eaten too freely of fruit, his stomach became disordered, pulse excited, skin hot; again he indulged

in all former frivolities and irregularities. Ordered all medicines to be stopped; his diet to be farinaceous.

4th. No cephalalgia; hair dry; scalp loose, heat augmented at the sides and behind; pupils natural; countenance more composed; temporal arteries turgid, pulsation weak, regular, 88; face, tongue and lips more pale; some diarrhoea; appetite again voracious; continues to increase in flesh; heart's motion regular, 88, strong; pulse in radial artery weak. The love of order returned; attentive to personal appearance; affection for friends begins to show itself; trifles no longer cause fits of merriment; general carriage much more regular. Ordered the iron to be resumed.

13th. Though carefully watched he often overloads his stomach, from which circumstance he has occasionally wakefulness at nights. No pain in head; temporal pulse weak, regular, 104; face pale; lips redder; appetite not so great; no abdominal tenderness; heart's motion strong, over 100; radial pulse weak. During the last week his conduct has been more trifling; disposed to pick up and secrete various articles; still attentive to personal appearance; occasionally yields to all his former ludicrous impulses. Ordered \mathfrak{Z} v. of blood to be taken from occiput.

15th. The iron has been gradually increased, from \mathfrak{D} ss. to \mathfrak{Z} i. t. d.

23d. Not so well; manifests great versatility of thought and action.

Aug. 12th. Sleeps soundly, no cephalalgia; skin of forehead soft; temporal and radial arteries 92, regular, strong; tongue clean, appetite voracious, has increased very much in flesh; external capillaries filled with red blood; no abdominal tenderness; bowels regular; heart's motion strong, about 92. Manners dignified, general conduct unexceptionable; enjoys himself by reading, and riding, and walking about the country. Saw his brother—was anxious to return home.

Sept. 6th. Sleeps well; hair dry, scalp loose, heat normal; temporal and radial arteries 84, strong; adnata normal; face ruddy; tongue healthy; appetite not so strong; bowels regular; skin of hands and feet warm, colour natural; heart's motion full, active, 84. He expresses regret over past irregularities; and fears lest they should be attributed to perverseness of character, rather than to disease.

24th. Discharged, well.*

REMARKS.—*First*. That there was in this case a deficiency in quantity and in quality of red and healthy blood, was inferred from the emaciation, from the exsanguineous state of the external capillaries, of

* Since then we have heard by rumour that he had committed suicide.

the lips, tongue and skin—from the increased motion of the heart and arteries, and from the enfeebled condition of the same.

Second. All of these symptoms, together with the diseased manifestations of the mind, were referable to an attenuated state of the blood; because, just in proportion to the activity of nutrition, the capillaries filled with red blood, the force of the heart and arteries increased, the frequency of their pulsations diminished, and the moral phenomena approached toward a healthy standard.

Third. It is worthy of particular attention that when, in the above case, the usual quantity of food was withheld, as it was upon the supervention of fever, or when its assimilation was prevented by diarrhœa, the pulsations of the heart and arteries were augmented; and the moral signs were more perverted, and they continued so sometime after the subsidence of the fever and diarrhœa.

Fourth. The want of indications for the treatment of insanity has been universally acknowledged; but in similar cases to the one just detailed, the *impoverished state of the blood* may be regarded as a very important indication. To change its unhealthy qualities, or to augment its quantity, under such circumstances, we know of no better measures than the liberal use of *iron*, together with full diet and free exercise in the open air. The former not only increases rapidly the appetite and strengthens the powers of assimilation, but under its use red blood is formed faster than by any other tonic with which we are acquainted.

Fifth. Persons once affected with insanity are always liable to relapses; the danger of them is proportional to the number of previous attacks. Each recurrence of the disease renders much less the probability of a permanent cure being effected.

CASE V.—*Moral Insanity. Cause, domestic difficulties—duration five years—cured.*—Mrs. —, ætat 50, of Pennsylvania, was admitted on the 17th of June, 1836. Eight years ago she had for a long while “the chills,” afterwards was much troubled with pains in the limbs, and with occasional depression of mind. In 1834 she was greatly harassed with gloomy thoughts and evil forebodings of the future; refused to mingle in the social circle; and shortly after secluded herself from her nearest friends. Nothing now afforded pleasure; religion, which had heretofore supported her under the deepest trials and afflictions, was neglected; despair took possession of her mind, and rendered her unfit to perform the regular duties of life.

Six months before being admitted here she suddenly became joyous and happy; the company of neglected friends was now eagerly sought, and in return she made every preparation at her own house for their

reception, but upon their arrival she invariably retired, and left them to entertain themselves. During this time she slept very little, was often up all night rummaging about the house.

Present state, June 23d. Stature large, muscles flabby; head large, hair dark brown, eyes hazel, complexion dark. Sleeps part of the night; scalp loose, heat increased; pulse in temporal and radial arteries small, weak, about 70; has frontal pain; pupils contracted; adnata bluish; face and tongue exsanguineous; countenance sane; appetite poor; bowels costive; abdomen distended with wind; skin of hands and feet pleasantly warm. She is kind and benevolent to a fault, rejoices that she is not deprived of the "use of her senses," and that "opportunities for doing good are not denied." She intends to teach some of her fellow patients "politeness by example;" to correct the "impudence of others by reproof," while she fears that a third class will be incorrigible; very loquacious, communicative and versatile; conjugal and maternal affection suspended. Cupped $\frac{2}{3}$ v. from occiput.

27th. Sleeps better; has frequent frontal pain; scalp hot before and behind, hair dry, ears translucent, face pale; temporal and radial arteries 68, regular; tongue pale, moist; bowels regulated by magnesia; appetite middling; heart's motion slow, regular, 68; troubled with flatulence; skin of hands and feet warm. Regardless of personal appearance, unsteady in all pursuits; always doing, yet never accomplishes any thing; much less generous; gathers up all the trash she finds, and carefully deposits it in her room; she secretes thread, needles, thimbles, and all such articles, about her person and in her chamber. Cupped $\frac{2}{3}$ vij. from occiput.

July 6th. Sleeps well; some pain in head; heat of scalp increased; eyebrows drawn up; appetite better; heart's motion about 70, regular; skin hot, no abdominal tenderness. Her carelessness and vacillation remind us of a child, while in fondness for telling oft-repeated stories she resembles one of old age. If a book is taken up, before the first half page is glanced over it is exchanged for drawing materials; these are very soon laid aside, and the needle is taken up; this soon fatigues her, and is also thrown down or exchanged for something else. Her whole time is spent in this unprofitable and vacillating manner.

12th. A few days since she saw her friends—no unusual excitement followed. The propensity to secrete things continues so active, that it is necessary to have a general search once a week in her room, for lost silk, ribands, capes, scissors, thimbles, &c. &c.

Aug. 15th. Sleeps very soundly; hair soft; skin of hands and feet warm; temporal arteries turgid, 68; heat of scalp augmented before and behind; tongue clean; appetite very strong; nutrition active;

increasing rapidly in flesh; external capillaries filling up with red blood. Still very unsteady; the propensity to pick up and to conceal whatever pleases her fancy, remains active; when confined to her room for improper conduct becomes insolent and boisterous.

Sept. 20th. Has frontal pain; heat of scalp increased; sleeps soundly; temporal and radial arteries strong, regular, 68; pupils natural; countenance sane; tongue red, clean; appetite voracious; bowels regular; no abdominal tenderness; nutrition active; feet comfortable. Much more careful of personal appearance; less talkative; she now loves and practises order; her room is no longer the repository of the refuse, or of the property of others; more steady in all pursuits; less benevolent and kind; regrets over the past. Cupped \bar{Z} vi.

27th. On the night of the 25th inst. she did not sleep one hour. Since then, more loquacious and vacillating; temporal arteries small, turgid; some pain in forehead; scalp too warm behind; appetite very strong; bowels regular; tongue red, moist; nutrition healthy; heart's motion regular, about 68; no abdominal tenderness; radial pulse small, 68. Irritable, captious, and cannot bear reproof. The iron has been gradually increased from \mathfrak{D} ss. to \bar{Z} i. t. d. Ordered \bar{Z} xiv. of blood to be taken from the head.

After being cupped is relieved of cephalalgia for several days.

Oct. 17th. Sleeps well; troubled occasionally with pain in the head; temporal artery 64, turgid; tongue red; bowels regular; has increased very much in flesh; appetite enormous; radial pulse 64, strong. Anxious to return home; all childish pursuits abandoned; follows steadily every employment she undertakes; temper remains irritable and captious. Cupped \bar{Z} vii.

Nov. 1st. Troubled with frontal pain; radial arteries about 70; tongue clean; digestion regular. She behaves with the utmost propriety.

29th. She has taken no medicine for two weeks. *Discharged well.*

REMARKS. *First.* The commencement of moral insanity is often so insidious as to be unnoted for years by the friends of the patient, or if marked, the changes in disposition, habits and temper are attributed to the occurrence of some external cause. It is not, therefore, until these mental variations are frequently exhibited, or until they are observed by strangers, that the friends will admit the existence of mental derangement. But the admission being made, many circumstances, at first overlooked or forgotten, are recalled, which make the probable duration of the disease much longer than was originally suspected.

Second. This ignorance of the true nature of moral insanity, or

of its incubation, is frequently productive of the worst consequences, inasmuch as the disease is liable to be rendered, by long continuance, intractable to therapeutic measures.

Third. It is a maxim very generally admitted, that the duration of insanity, *cæteris paribus*, has more influence upon its ultimate termination than any other individual circumstance.

Fourth. The paleness of the external capillaries, of the tongue, lips and skin, in Case V. were indicative of a deficiency of red blood in the system; which was restored by the use of iron, and full diet. The former had to be suspended several times, on account of the frequent recurrence of pain in the frontal region. When pain is present its removal should almost constantly be attempted by the application of cups; especially if it is accompanied with an increase of heat in the scalp, as it was in the last case. Pain is commonly attended with an aggravation of the mental symptoms, which are likewise improved by the topical loss of blood.

ART. VII. *Case of delivery of a Fœtus through the abdominal parietes.* By S. H. HARRIS, M. D., of Clarksville, Virginia.

The following case is one, in some respects, so singular as to merit in my opinion a notice in your useful Journal. I hold it to be the duty of the practitioner to submit for publication, a fair and candid history of every case which may fall under his observation, calculated in any way to benefit the science. The medical profession has been deprived of many useful facts by the negligence of country practitioners in not reporting rare and extraordinary cases, many of which come under their observation, and are soon forgotten or resigned to the gossips of the neighbourhood, to swell the catalogue of traditional wonders.

As I neglected to take notes during the progress of the following case, I am unable to make a very full report. Its general history, however, will no doubt be deemed sufficient.

On the 11th day of November last, I was called to a negro woman residing in the village, who was labouring under uterine hemorrhage. She was about thirty-five years of age, of robust constitution, and the mother of six living children. According to her own calculation she was in the eighth month of pregnancy. A few days before while making up a bed she had been suddenly seized with pain in the abdomen, which was soon followed by a slight discharge of blood from the

uterus. The pain and hemorrhage frequently recurred, but was not so severe as to prevent her from attending to her usual employment until the evening I was called in. The hemorrhage at this time was somewhat alarming and the pain very distressing, though confined chiefly to one side of the abdomen. As she was of a plethoric habit, and her pulse full and strong, I bled her freely, and gave two grains of the acetate of lead, with the quarter of a grain of opium, every half hour, and directed the application of cold cloths to the region of the pubis. After continuing this course for six hours the flooding diminished, but the pain continued without any amendment. I bled her again to the extent, probably, of sixteen ounces, and continued the acetate of lead and opium at longer intervals; some laxative was likewise given, and the cold applications kept applied. Twenty-four hours expired without any material change in her situation, except that the abdomen became more painful to the touch, and the breasts somewhat tumid and tender. The flooding was not at this time profuse, but its continuance induced me to believe that delivery would soon take place. She was again bled twelve ounces, and the acetate of lead and opium discontinued; the cold applications were used only occasionally. After waiting perhaps twenty-four hours I made an examination of the os uteri, and found it not larger than a twelve and a half cent piece, and very rigid. The finger instead of passing through a circular opening with thin edges, as at the full period of uterogestation, passed through a narrow channel of more than an inch in length. It was evident, therefore, that the neck of the womb had not yet expanded. I could distinctly feel the head of the child through the membranes, but the placenta was no where in reach. After thus satisfying myself that it was not a placental presentation, and that the rigid state of the os uteri forbid the administration of ergot, I introduced the tampon, gave fifty drops of laudanum, and left the patient for twenty-four hours. I will mention by the way, that up to this time and during the progress of the case afterwards, her bowels were evacuated daily by some laxative medicine or mild injections. The opiate procured some sleep, but it had not changed in any respect the general aspect of the case. The os uteri remained rigid and unyielding, and the pain incessant, without appearing to act in the slightest degree on the contents of the uterus. The flooding continued, and though not profuse, its constancy began to weaken the patient, and excite some anxiety in my mind, as to its final result. About this time (between three and four days after I commenced treating the case) the tension and soreness of the breast subsided, and she no longer felt the motion of the child. The liquor amnii had likewise been dis-

charged. These evidences of the death of the fœtus were soon confirmed by the offensive character of the discharges. The pain appeared to be fixed at this time in the left hypochondriac region, and remained stationary for many successive days. Her respiration was from the first somewhat obstructed by an accumulation of frothy mucus in the bronchi. This symptom continued throughout, and was a source of great distress and uneasiness.

It would be impossible for me to give any thing like a detailed history of the case, or its treatment, for the next twenty days. Various conjectures arose in my mind during this time, in regard to the nature of the case, and the causes which probably retarded the expulsion of the fœtus. The equivocal character of the symptoms, however, prevented my arriving at any positive conclusion. The possibility that the uterus might be ruptured, certainly occurred to my mind, but such a conjecture was unsupported by the symptoms; and even if I had been irresistibly led to this conclusion, the circumstances of the case would not have justified a forcible entry into the uterus. The operation of gastrotomy would have been equally rash. The placenta came away about the twelfth day of her confinement, partially putrid. The ergot was afterwards administered in scruple doses, but the stomach rejected it immediately. Repeated efforts were made to dilate the os uteri, but no force, prudent to use, could overcome its rigidity. Large doses of opium were given, but it produced no effect, other than a mere temporary respite from pain. A small blunt hook was cautiously introduced into the womb, to try if possible and break down the bones of the cranium, but their firmness bid defiance to such a feeble instrument. After being thus defeated in all my attempts to deliver her, little else was done for many days but to examine occasionally the os uteri, give opiates, mild tonics, and use such injections, per vaginam, as were best calculated to correct the offensive nature of the discharges. Though harassed and debilitated by pain and the loss of blood, the patient's pulse remained firm and her appetite tolerably good; and yet a situation, apparently more hopeless and wretched, cannot well be imagined. That sympathy, however, which never yet slumbered around the bed of travail, was particularly active on this occasion. Nothing indeed was left untried, which benevolence or zeal could suggest, to alleviate her sufferings or inspire her with courage.

About the 10th of December the nurse called my attention to a small circumscribed tumour about the size of a chesnut, a little below the umbilicus to the right of the linea alba. I will remark that for six or eight days previous to this time, the pain seemed to be confined

chiefly to this part of the abdomen. The tumour felt very soft and communicated to the touch a sense of fluctuation. At its base there could be distinctly traced a muscular ring, very hard and rather more than half an inch in diameter. Gentle pressure on the tumour did not appear to give much pain, but when the end of the finger was forced into the ring she complained of excessive pain. The moment I saw and examined this tumour, I felt satisfied that there was a solution of continuity of the uterus, and that the fœtus was making its way to the surface. The subsequent history of the case will prove that my opinion was well founded. The woman's general health had not suffered as much up to this time as might have been expected. Though very much emaciated, her strength had rather improved under the influence of the tonics, and the generous diet that was allowed. Her pulse, though quick and irritable, indicated no disposition to sink. Under these circumstances I determined to postpone, for a few days at least, any operation that might be deemed necessary for the safety of the woman. Large emollient poultices were kept constantly applied to the abdomen. On the 13th, three days after the tumour was first discovered, it was considerably enlarged, and the muscular opening or ring, at its base, probably two inches in diameter. A consultation was requested, and Dr. Singleton of the adjoining county was called in, when it was agreed to open the tumour. This operation I performed with a common abscess lancet. A slight incision was made into the apex of the tumour, when about half a pint of thin grayish matter issued, together with a portion of gas, which filled the room with a very offensive odour. A probe was introduced which soon met with resistance, so as to leave no doubt on our minds but that the fœtus was fast approaching the surface. It was deemed prudent, however, to defer any farther attempts to extract it until the morning. On the 14th, the incision was enlarged, the muscular ring having expanded in the mean time so as to admit the hand. The putrid mass was then drawn to the opening by means of forceps and a small blunt hook, so as to enable me to grasp it with my right hand; this I readily accomplished, and by using moderate force extracted the entire body. The bones of the cranium, however, were left behind, and increased very much the difficulties of the operation. I was under the necessity of introducing my hand through the incision down into the body of the uterus, so as to separate the bones and bring them away in pieces.* Mild soap suds was then injected through the in-

* Judging from the size of the body and the bones of the cranium, I am disposed to think that the fœtus was between seven and eight months old.

cision into the uterus, followed up by a pretty strong decoction of Peruvian bark. The edges of the incision were then drawn together and confined by long straps of adhesive plaster; tight dressings were applied and a wide bandage drawn around the abdomen, after which a large opiate was given, and the poor woman left to enjoy, for the first time in four weeks, a quiet slumber. The discharge from the opening was very profuse and offensive for several days, the injections, however, were repeated every morning, and for several successive days large poultices were applied, made of charcoal and Peruvian bark in equal quantities. The tonics and opiates were still continued with a liberal allowance of nutritious food. Under this treatment healthy granulations soon made their appearance, and the incision healed up entirely in about five weeks. While the healing process was going on, I could at any time distinctly see the lining membrane of the uterus in the bottom of the wound; and could with perfect facility introduce my finger into the cavity of that organ.

Remarks on the preceding case by the EDITOR.

The preceding neatly drawn up case is a very interesting and extremely rare one. The records of medicine, it is true, furnish numerous examples of the discharge of fœtuses through openings formed in different portions of the intestines, perineum, vagina, or abdominal parietes, but in nearly all such instances the fœtus was originally extra uterine, or had escaped into the abdominal cavity through a rupture of the uterus formed during labour. In the case related by our correspondent, on the contrary, the fœtus remained within the uterine cavity until discharged. The dead child acting as a foreign body, must have excited first irritation and inflammation in the anterior portion of the uterus, which, extending to the abdominal parietes, caused adhesion between these two parts; suppuration and ulceration followed, and an opening was thus formed into the uterine cavity through which the fœtus passed.

We know of but two other similar examples on record, and in neither of them is the evidence of the fœtus having remained in the cavity of the uterus until discharged, so complete as in that related by Dr. Harris. One of the cases we have just alluded to, occurred in the practice of Dr. Muller, and has been already laid before our readers. See vol. iv. p. 512, of this Journal. The other was communicated to

the Royal Medical Society of Copenhagen in 1833, by Kjær, district surgeon at Holstebro in Jutland.

We extract the following notice of this case from a recent number of the *Medico-Chirurgical Review*.

“In the summer of 1827, a woman ætat 39, in her fifth pregnancy, experienced violent pains in the abdomen whenever the child moved, and the fear of approaching abortion induced her on several occasions to call in a midwife, who, after examination, declared her to be not pregnant. About the middle of December, when she had calculated that her confinement would take place, the ignorant midwife declared that no pregnancy existed, although the movements of the child could be seen and felt, and affirming that the good woman was certainly bewitched, she finally left her to her fate.

“For several days the violent movements of the child were still felt, after which they ceased altogether. The poor woman lay in the greatest torment, shrieking with pain, and it was necessary to hold her in bed. The abdomen was excessively distended, and so sensitive, that even the weight of the bed-clothes was unbearable. It was eight weeks after this that she was examined by a physician, who brought away a fleshy mass which was considered to be a portion of the placenta: nothing more was done. In the course of five weeks she was able to leave her bed; in the spring she could walk a little out of the house, and a quarter of a year after the cessation of the movements of the child, the catamenia appeared: she, however, felt weak and poorly throughout the whole of the following summer and winter. About the latter end of the succeeding spring, a tumour formed below the umbilicus, and gradually attained the size of a goose’s egg; it was opened by a pitch plaster in June 1829, and discharged a large quantity of an inodorous fluid. At this time, as the writer afterwards learned, a piece of flesh closed the opening, and was taken away, upon which was observed something resembling a navel-string. The belly collapsed, but again became distended, and the opening healed up. In six weeks it again broke out, and gave issue to thick and highly offensive fluid, the discharge of which was not followed by a diminution of the abdominal distension. On the 26th of September, the patient was visited by the writer, who found her in bed in a state of exhaustion, with a quick, full pulse and dry tongue, the bowels confined, and micturition difficult, the wound was painful, and she complained of nausea, which occasionally amounted to vomiting, in consequence of the excessively offensive smell of the discharge.

“The abdomen was hard, sensitive, and uniformly distended, the opening below the umbilicus large enough to admit a sixpence (zweigroschenstück,) and protruding through it, a macerated mass covered with hair. Herr Kjær having removed this substance with the scissors, felt within the opening a bone with a jagged edge, and on withdrawing his finger, a large quantity of a thick putrid fluid escaped, and then a mass resembling rancid oil. Nothing unusual was discovered by an examination per vaginam; the crevix uteri, indeed, was rather long, but not at all dilated, and the os tinæ sufficiently open to admit with facility a probe, which, however, could not be introduced into the cavity of the uterus. Herr Kjær resolved to dilate the opening in the abdomen, and the operation was performed on the 4th of October, the patient having been previously removed for the purpose into the town infirmary. At this time she was greatly debilitated. The hands and feet were œdematous, and a successful issue seemed extremely doubtful.

“The patient being placed upon a bed, the operator dilated the opening in the direction of the linea alba to the extent of three inches, resting the scalpel first upon a director, and then upon his finger; the skull of the fœtus, previously opened with Smellie’s perforator, was now extracted, and at length, with the

assistance of this instrument and of the scalpel, the rest of the skeleton was removed. There were no traces of the after-birth or navel-string, with the exception of a piece of the latter, an inch and a half in length, which was attached to the umbilicus. The brain and intestines had also totally disappeared. The sac in which the fœtus was contained, was every where adherent to the surrounding structures; its parietes presented several osseous points, and at its lowest part was a kind of thick cartilaginous ring, with a depression in the centre containing a cleft. Much loose and putrid membranous matter was washed out by injections of tepid water, the edges of the wound were then brought together by a suture, and suitable dressings applied. After the operation (which occupied three quarters of an hour,) two grains of musk in powder were administered every two hours, and a dose of a mixtura acida containing musk was given every hour. In the evening the patient complained of thirst and nausea, and the dressings required to be renewed on account of the profuse discharge. On the following days bark with elix. aromat. acid. was taken alternately with a musk mixture, and port wine diluted and warmed injected daily into the sac. Under this treatment the constitutional and local symptoms progressively improved, the vomiting ceased, the wound secreted healthy pus, and on the 13th of October she was able to leave her bed. The patient who for two years, during which she had borne the child, had continued to menstruate, ceased to do so after the operation, until on the 23d of November bleeding from the wound took place. In the evening there was a discharge of blood from the vagina, and at the same time that from the wound diminished. From this period the catamenia recurred at regular intervals through the natural passages. She is now in good health: the wound in the abdomen is still open, though the discharge from it is inconsiderable.

“The writer is of opinion that the fœtus lay in the cavity of the uterus, that the cartilaginous ring at the inferior part of the sac, was nothing else than the cervix uteri, and the depression in it the orificium internum. Several circumstances, he thinks, corroborate this view of the case: from the commencement of the pregnancy, the abdomen was always uniformly distended, behind the sac nothing could be felt but the vertebral column, and after the operation the neck of the uterus ascended, and the os tinæ was firmly closed. The impossibility of birth in the natural way, he attributes to the cartilaginous state of the ring, in consequence of which the inferior part of the uterus was incapable of dilatation.—*Siebold's Journal für Geburtshülfe, Frauenzimmer und Kinderkrankheiten.* Band XV. 1835.

ART. VIII. *Case of severe injury of the Brain terminating favourably.* By M. R. GRISWOLD, M. D., of Goodwynsville, Dinwiddie County, Virginia.

In the August No. of the American Journal of Medical Sciences, is recorded a case of “extensive and deepseated injury of the brain—unattended by any disturbance of the intellect, and terminating favourably.” Having had lately (but previously to the receipt of my August No. of the Journal) a case similar in its aspects, and resulting,

under similar treatment, in a like favourable issue, I have thought it might be interesting to give to the public a statement of it, as confirmatory of the astonishing powers of nature, in the reparation of an injury so seemingly threatening of destruction to mind and body.

A son of William H. Jones, of Dinwiddie County, Virginia, aged about 2 years, well grown, fat and healthy, fell from the upper floor of a dwelling house, and clearing the first flight of steps was precipitated with great violence upon one of the sharpened extremities of an old fashioned round-post rush-bottomed chair. The rounded knob of the back chair-post, which received the head of the child, had been whittled away and sharpened to a point, so as to resemble very much in length, shape and size the finger of a large man. This finger-like extremity pierced the child's skull and brain to the extent of about one and a half inches, entering the temporal bone just above the tragus and just in front of the superior helix of the external ear.

After the force of the fall was thus broken, the body of the child lay upon a table that happened to be near. But so firmly transfixed was the head upon the chair-post that it drew the chair over upon the table and retained it there until the father of the child raised the chair and by force extricated the penetrating extremity from the wound it had made.

The substance of the brain was very much broken in upon. A portion of it was found adhering to the chair-post, and other portions were seen protruding from the flesh wound.

I saw the patient in less than hour after the accident. He had lost a considerable quantity of blood from the rupture of the veins of the integuments, and was in a sound, apparently natural sleep. There were no symptoms of compression of the brain and none of concussion except contraction of pupil and occasional vomiting and disposition to sleep. No treatment was directed at first visit, except rest and the application of lint to the wound. The next day, and for 7 or 8 days succeeding, there was high fever, attended with full, quick pulse, hot surface and great jactitation. Apprehending inflammation of the brain a rigid antiphlogistic course was commenced and pursued; embracing, in its details, free venesection twice, active purgation daily, and cold applications to shaven scalp as indicated by excess of temperature there.

After the fever subsided, the wound which had been kept open along by pledgets of lint, suppurated freely. This suppuration was promoted by appropriate dressings. The wound is now completely healed. The injury to the cranium and to the brain within appeared

to have been repaired by the inherent recuperative energies of the system. The portion of brain exterior to the skull, in part, sloughed away piecemeal, and in part discharged from the suppurating wound in the form of ichor or thin milk-like fluid.

Whether in older persons the “vis medicatrix naturæ” would accomplish so much, is a question I will not take upon myself to answer.

The child at this time is in perfect health, and in every respect, in good condition. There is no appreciable impairment of the intellectual faculties, nor was there any during the treatment.

Goodwinsville, Dinwiddie county, Va., September 28, 1836.

ART. IX. *Observations on Spinal Irritation and Inflammation.* By
SAMUEL ANNAN, M. D., of Baltimore.

THE important part performed by the spinal chord in the diversified forms of morbid action to which the human body is liable, has of late years attracted more attention than at any former period. It is not, however, entirely a modern discovery. Fernelius, Morgagni, Lieutaud, and Valsalva, and others of less reputation, have given us the results of their observations; and Dr. Frank published at Pavia, in 1791, an admirable dissertation, “*De Vertebralis Columnæ in Morbis Dignitate.*” In 1808, Dr. James Saunders, of Edinburgh, in his lectures on the Practice of Medicine, taught, that an abnormal condition of the spinal chord, was the chief agent in the production of many of the most prominent symptoms of several diseases. Like most men, who believe they have the merit of originality, even if it is only for an extension of views previously entertained, he applied his doctrines to the greater number of cases presented to his inspection. But it was the different varieties of fever, which more particularly arrested his attention; and neither Clutterbuck nor Broussais, nor Louis, are more fully convinced of the truth of their respective theories, than he was, that spinal irritation and inflammation are the cause of fever. In all fatal cases, morbid appearances were perceptible in the spinal canal; and it was inferred, that they had been the *cause* of the phenomena which preceded death.

In 1828, Dr. Saunders published a paper on Gout, in the Edinburgh Medical and Surgical Journal, where he contends that he has proved by his dissertations, that there is no part not occasionally in a sound

condition, except the centre of the nervous system; and that disease of this part is the only morbid state essential to gout. In the most common or regular form of gout, the lumbar and sacral nerves are the first disturbed, involving the inferior extremities, and often simultaneously the bladder and rectum; next the morbid action ascends, involving the kidneys, the liver, stomach, heart, respiratory apparatus, and encephalon, proving that though all parts of the nervous centre may be successively invaded, yet nature points to the inferior portion of the spinal marrow as the most liable.

Tetanus has also been included amongst those diseases supposed to arise from inflammation of the spinal chord or its membranes. The researches of Duchatelet and Martinet, and many others, demonstrate, that a morbid condition of the contents of the spinal canal, is at least a concomitant of this fatal malady. Spinal arachnitis was invariably observed. It was known by turgescence of vessels, producing redness of various shades, thickening, augmented density, and loss of transparency, serous effusion, purulent, sero-purulent, or sero-gelatinous exudation, and formation of false membranes; while in other cases, inflammation and consequent softening of the chord itself have been observed.

More recently Mr. Tate has thought he could trace hysteria with all its diversified symptoms, catalepsy, chorea, and many anomalous cases, to the same region; and Mr. Teale, and the Messrs. Griffin, have published works to show, that neuralgia, angina pectoris, and palpitation of the heart, with many accompanying symptoms, are dependent upon irritation of the same locality. If to the foregoing we add hydrophobia, which is considered by some essentially a spinal disease, we complete the catalogue of suffering from this prolific source. The following case has come under our notice, and we think it not undeserving of publication.

M. F., aged about 25 years, on February 25th, 1834, in attempting to release a child from the grasp of a wounded hawk, which had been brought into the house, was struck on the outside of the right foot, and one of the talons of the bird penetrated between the metatarsal bones of the ring and little toes, making a wound of considerable depth. The pain at the time was not very great, but in three or four days it became severe, and extended up the leg from the place of injury. A physician was sent for, who made an incision into the place of the wound, and applied spirits of turpentine. Chamomile poultices were employed, and the wound healed in two or three weeks, under a dressing of simple ointment. The pain of the limb, however, was not in the least relieved, but continued to extend further up the leg. The outside of the sole of the foot also became painful, and likewise

the little toe and the ring toe. Five weeks after the reception of the injury she came to town and placed herself under our care. The pain of the limb was now so severe that she was unable to walk. The application of three blisters to the upper surface of the foot, in as rapid succession as the healing of the sores admitted, mitigated the suffering in so great a degree that she returned home, with the expectation of complete recovery. In about two weeks, pain made its appearance under the arm, along the side, extending round to the shoulder, and sometime afterwards presented itself about the middle of the humerus, having been preceded during several days by a sensation of heaviness about the neck and between the shoulders. The pain gradually extended down the arm to the hand and fingers; being confined, however, to the little and ring fingers. The suffering was more severe in the latter, as had been the case in the foot; the occasional paroxysms of pain having been much more severe in the ring toe, and likewise of longer duration. The wrist, hand and arm swelled considerably shortly after they became painful. There was distressing numbness and tingling of the arm, and so great weakness that she could not use it. This apparent weakness was no doubt caused by the increase of the pain on motion. The pain was especially aggravated by touching anything with the fingers, or laying the arm on the table. Two or three weeks after the pain occurred in the arms, about a week before she again came under our care, she was attacked with stiffness of the lower jaw, accompanied by great aggravation of the pain of neck, extending from the spine towards the front of the neck and along the jaw. The stiffness of the jaw appeared to exist on both sides, but the pain was altogether on the right side. She was probably deceived in supposing that the muscles of the left side of the jaw were affected. The rigidity of those of the right side would bind the jaw so as to make it appear as if those of the opposite side were also rigid. The pain and stiffness of neck were so great that she could not turn her head in the smallest degree; neither could she open her mouth so as to introduce a spoon. She had two attacks of this description in one week; the first, the most severe, coming on with darting, shooting pains, from the spine round to the front of the neck and along the jaw, with intervals of ease, and each attack continuing about an hour. She was relieved both times by bathing the legs up to the knees in lye, as hot as could be borne. Simultaneous with the appearance of the pain of side, arm and neck, great tenderness of the spine, chiefly on the right side, opposite the upper dorsal and lower cervical vertebræ, presented itself; which was augmented as the pain of the arm became more severe, until the slightest pressure caused

excruciating agony. During the week which preceded her return to town to place herself again under our care, she had scarcely slept at all, from the severity of her sufferings. On examining the spine the tenderness was found to be exceedingly great, and the slightest pressure produced contractions of the little and ring fingers. There was not at any time much general fever; but both leg and arm, especially the latter, were either burning with heat or affected with a very distressing sensation of coldness. These different feelings alternated frequently through the twenty-four hours, continuing an hour, more or less; but as the general rule, the heat continued longer than the coldness. When the cold stage came on there was something of a chill over the whole body, accompanied by sickness of the stomach. The hand and arm never felt cold when touched with the other hand, but occasionally felt hot; although sometimes when they burnt the most there did not appear to be any increase of temperature when felt by the other hand.

Cupping two or three times freely, and tartar emetic ointment along the tender part of the spine, very speedily relieved her almost entirely. Since that period, now about two years, she has enjoyed good health. Cups have been applied to the spine once or twice for some slight symptoms of reappearance, and the abstraction of blood in every instance has afforded remarkable relief. At present, whenever her mind is distressed by any cause, she experiences some pain of back about the lumbar region, but she cannot perceive that it is accompanied by tenderness of the spine on pressure; and it is but temporary, disappearing with the cause. There is still, however, a slight sensation of numbness and heaviness about the shoulders and neck, and latterly extending over to the left shoulder, accompanied occasionally by the feeling of something crawling under the skin. The right leg is also much weaker than the left, and fails in walking to any distance. The seat of the original wound gives her no trouble, except when she happens to place her foot on some elevated body which presses upon the sole of the foot opposite to it, slight pain and tingling are then produced, followed by an occasional sting shooting from the part, but of insignificant amount.

The foregoing is obviously a case of wound of one of the twigs, or of the trunk, of the external plantar nerve, which is distributed upon the little toe and the fibular side of the ring toe. The posterior tibial nerve, from which the external and internal plantar nerves originate, is the continuation of the great sciatic nerve, which is formed by branches from the three superior sacral and two inferior lumbar nerves. This nerve supplies the greater part of the lower extremity. Now,

the first inquiry which suggests itself is, did the pain of the limb proceed from an extension of the inflammation—from the wounded part of the nerve, to all the filaments supplying parts where pain was experienced; or was there merely increased sensibility, caused by the local irritation; an augmented power of transmitting impressions. We believe it was the latter; and our belief is founded on the fact, that as the local inflammation subsided under the repetition of the blisters, the pain of the limb disappeared; which we think would not have been the case if there had been so extended an inflammation. If we are asked to explain the manner in which the nerves take on this augmented power of transmitting impressions, we reply, that we will give a satisfactory account of this whenever we are shown how common it is they transmit ordinary impressions—whenever we have it made clear, what it is, in which a sensibility consists.

It should next be remarked, that the irritation, when extended to the spinal marrow, appears to have concentrated its force about that part from which the brachial plexus of nerves arises, viz. opposite the upper dorsal and the lower cervical vertebræ; and it is manifest that the affection of the hand, arm, and shoulder, and neck, was consequent upon the morbid condition of this portion of the spinal marrow, and probably of the roots of these nerves. We think we are justified in this inference from the course the irritation, in propagating itself, must necessarily have taken from the tenderness of the spine; the gradual extension of the pain along the arm to the fingers; the contraction of the little and ring fingers on pressing the spine; and the immediate relief afforded by the treatment. It cannot but have been remarked, that as in the foot it was the little toe and the ring toe, which were affected, so in the hand, it was the little and ring fingers which were the seat of the pain; the latter being supplied by the ulnar nerve, in the same manner as the former are by the external plantar nerve. This would seem to indicate a direct connexion or continuity of filaments, from the foot to the hand.

With the exception of tetanus and hydrophobia, most of the diseases which appear to be connected with, or dependent upon, irritation of the spinal marrow, although sufficiently distressing, are not often fatal; and therefore afford us but few opportunities for examination. We think, however, that we are warranted in the inference, from the symptoms and treatment, as well as from the appearances in those cases where death has been caused by tetanus, that in many instances, either the medulla itself, its membranous envelopes, or the roots of the spinal nerves, are in a state of congestion, to a greater or less amount. Admitting it to be true, that the nervous matter can

have its functional action increased, and augmented sensibility, amounting to pain, be the consequence prior to, and independent of, any disturbance of the vascular system of the nerves and spinal marrow, it is nevertheless equally true, that so intimate is the connexion between the nervous and vascular systems, that the latter will soon partake of the irritation, and congestion quickly appear, which, reacting upon the nervous matter, will aggravate all the symptoms; and thus action and reaction will alternate, until change of organization is effected, and morbid products present themselves, indicating total destruction of healthful function. That very great changes do take place in the spinal canal, either as the cause, or the effect of disease, has been established beyond a doubt. Dr. Saunders has observed them after fever and gout; and the French pathologists have seen them after fatal cases of tetanus. And although we believe Dr. S. mistook the effect for the cause, we unhesitatingly admit his facts. We have not a doubt that he witnessed the morbid appearances of which he speaks; but we are quite as confident that they were the result of a cause, or causes, acting upon the system generally, and by no means confined to the spinal marrow. The destruction of the equilibrium of the circulation, in fever, is as likely to affect the spinal marrow as any other organ or tissue; and perhaps more so, it being the great centre for the reception of impressions from nearly the entire body. But it is manifest, that it is the sentient extremities of the nerves, which receive the primary impressions, and that the spinal marrow is secondarily affected along with the brain; from which organs the impression is transmitted to the sanguiferous system, disturbing its healthful operations; and it again reacts upon the nervous system. We thus have the same circle of action and reaction, as regards the entire system, as we have in relation to a single point. The French pathologists, we think, have given us information entirely satisfactory respecting the amazing changes which take place during the progress of a fatal case of traumatic tetanus. The irritation is propagated from the wound to the spinal marrow, and morbid action is excited there, which speedily produces morbid secretions and change of structure. The tetanic symptoms are those which we know are produced by irritation of the spinal nerves; and although the spinal marrow is secondarily affected, the primary irritation being seated in the wound, so extensive and predominant is its influence, through the nerves which it sends off, and distributes far and wide, it should receive our undivided attention. The original wound is comparatively insignificant. When the tetanic symptoms appear, we

may therefore safely say, we have a disease of the spinal marrow to treat.

In the case we have narrated, the irritation had nearly reached the point at which tetanus would have presented itself. She had two attacks, by no means light, of trismus; and a little more would have brought on the general tonic spasm. We have also in the same case a striking example of the influence of the nerves upon the blood-vessels. An irritation propagated down the arm from the roots of the brachial plexus of nerves, caused considerable tumefaction of the limb. The capillary arteries were probably excited so as to drive the red blood into vessels not usually carrying it.

Some writers still entertain doubts as to the reality of this whole subject of spinal pathology; and are disposed to regard it as a fiction of the imagination. The seat of the pain along the spine is said to be unknown. It may be neuralgia, congestion, inflammation, or something different from all. The slightest touch renders it excruciating. This shows that its situation is external to the vertebral canal. In the case of a lady, merely passing the fingers lightly over the fine hairs covering the nape of the neck, threw her into an agony. The persons afflicted are generally females, labouring under the mixed affection called nervous; and frequently on pressing the spine, the patient will shrink, or even cry out; but when the hand is transferred to another and remote part of the surface, the same indication of uneasiness or suffering will be repeated. Evidence from morbid anatomy, to confirm or refute that deduced from symptoms, is but rarely obtained; no structural change being discoverable in the part supposed to be the seat of disease. The results of the treatment, too, are equivocal. The difficulty of distinguishing between physical amelioration and mental impression, is so great, that the evidence derived from this source is of doubtful validity. Chalybeates and other tonics, with change of air and scene, are often more beneficial than local depletion and counter-irritation. In one of the cases reported by Mr. Torbet, in the *Edinburgh Medical and Surgical Journal*, leeches, blisters and issues were employed, as some will think profusely; but no material improvement took place till the patient was conveyed into another county. In another case, the complaint was aggravated by an issue in the back, and the patient recovered on its healing.

In reply to these objections, we venture to assert, in the first place, that so far from the texture or part in which the disease is seated, being unknown, there is scarcely an example of disorder of parts concealed from the eye, in which anatomy, physiology, pathology, and symptoms more forcibly combine, to point out the precise locality.

The function of the spinal marrow is, to be the medium of conferring motion and sensation. The sentient extremities of the nerves it sends off, are the principal seat of sensibility. The skin is more liberally supplied with nerves of sensation than the other tissues. Hence we find that increased sensibility of the skin, even amounting to acute pain, is the common symptom of disease of the spinal marrow, when it does not pass beyond a certain point. It varies according to the extent and intensity of the affection. A case is related by M. Serres in the *Archives de Medecine*, of a patient who had complete muscular paralysis, with increased sensibility of the whole surface of the body. He cried out and suffered great pain when the skin was lightly touched, and when the paralysed limbs were moved. On examining the body after death, the anterior portion of the spinal chord, between the sixth cervical and third dorsal vertebræ, was found softened and disorganized to the extent of three inches and a half; the posterior portion at the same part was slightly altered to the extent of one inch. The increased sensibility came on after the paralysis had existed some time. Here we see the augmented sensibility extending over the entire surface of the body; and we have the morbid condition of the spinal chord verified by dissection. The extraordinary case of the lady who was thrown into an agony, by passing the fingers lightly over the fine hairs covering the nape of the neck, is thus satisfactorily explained, no doubt the other tissues alongside of the spine are affected in proportion to the number of nerves of sensation distributed upon them. Besides, in the absence of the other ordinary symptoms of inflammation, in what other manner shall we account for the pain? The appearance of the skin is natural. There is no discoloration; no tumefaction. This would not be the case, if the soft parts external to the spinal canal, were the primary seat of disease. In the case we have narrated, not only was there pain on pressure, but the muscles of the arm supplied by the nerve, chiefly or solely affected, were thrown into spasmodic contraction.

We thus perceive that the symptoms are precisely such as we would anticipate, from our previous knowledge of structure and function. And although it is true, that in some of the fatal cases, no structural change can be observed, we need not be surprised, inasmuch as this occurs continually in other forms of disease; and only proves that functional disease had not yet reached the point of organic change. In the great centres of the nervous system too, disturbed function will produce more violent symptoms than in most other parts of the organism. But we have in the most severe and fatal cases of disease of the spinal chord, abundant evidence of morbid action; and so per-

fectly analogous are these cases, in many of their features, to the milder examples, that we are fully justified in the inference, that different degrees of this action, having either an entire similarity, or at least a close resemblance, have produced the diversified results. When we compare some of the symptoms of the severer forms, such as spasmodic contraction of muscles, and augmented sensibility of skin, in which after death disorganization of parts of the spinal chord, or its envelopes, is observed, with the same symptoms as they are presented to our notice in the milder instances, the resemblance is so strong, that we cannot be mistaken in referring them to identity of morbid action.

If the reader will turn back to the case of M. F. he will discover that she still experiences some pain of back, about the lumbar region, whenever her mind is disturbed by any cause whatever; that it is however but temporary; and disappears with the removal of the cause. This is probably an example of the slightest form of spinal irritation: no one questions the influence of the mind upon the body; and if hysteria originated in the great toe, its symptoms would be affected by the varying state of the restless mind. We know too that the different parts of the nervous system, are allied by a closer sympathy, with each other, than they are with the sanguiferous or any other system. We would therefore expect, that the mind acting upon the brain, and through it upon the spinal chord, would powerfully affect it, either for good or evil; and the greater its susceptibility of impressions, in consequence of morbid action, the more violently will it be excited by all kinds of mental agitation. Hysterical convulsions are frequently induced by mental excitement; and we have the best evidence, that the brain is not materially impaired in its operations, but that the spinal chord is the principal sufferer, in the fact, that the patient is not unfrequently conscious of what has been going on around her; although the spasms of the muscles prevented her from speaking. Sometimes in hysterical convulsions, and always in epileptic, the patient is altogether unconscious of his condition; which shows that in these cases the brain is also in a very disturbed condition. It is however manifestly impossible to have spasmodic motion, any more than voluntary motion of the greater part of the muscles of the body, except through the intervention of the spinal chord. Such being the connexion between the brain and spinal chord, it is therefore obviously absurd, to object to the spinal pathology, that the mind must be engaged, and the intrusion of distressing thoughts prevented, in order to effect a cure. In many cases this alone would be sufficient; as in that class where the mental affection is the primary link in the chain of causation; and

where the spinal chord has not suffered to that degree, that the unaided efforts of nature, on the removal of the disturbing cause, are insufficient to restore its healthful action. But it by no means follows, that this attention to the *juvantia* and *lædentia*, which are indispensable auxiliaries in the treatment of all diseases, is all that is required in cases of greater intensity.

Neither is the objection, that remedies, such as “chalybeates and other tonics,” apparently but ill suited to remove a disease arising from congestion or inflammation, have obtained great celebrity, at all more valid. In the slighter cases the irritation may not have reached the point of congestion; or if it has, the congestion is in its primary stages; and here medicines which improve the tone of the capillary system, are the best we can employ. Such medicines by invigorating all the living solids, and removing that debility which is not an uncommon concomitant of these cases, and doubtless in numerous instances, is one of the most active of the causes producing that extreme irritability, which so strongly predisposes to these convulsive paroxysms, are the very remedies which a comprehensive view would regard as being especially indicated. There is no question but that in relaxed habits, the slighter forms of congestion can be more speedily and certainly removed, by a mild course of tonics, with proper attention to regimen, than by any other method. And these are precisely the cases too, in which, occasionally, the conjunction of moderate depletion, by cups or leeches, is particularly serviceable. So that in many cases, tonics alone will cure, by infusing general vigour, and thus removing extreme sensibility to impressions, mental or physical, and also slight local congestion; while in a second class of cases, the application of cups or leeches to the part of the spine which exhibits tenderness, followed by tonics and attention to air, exercise, &c. will be sufficient; and again, in the third or most violent forms, a strict antiphlogistic plan is required, with perhaps repeated cupping and counter-irritation. It is only in these last cases that tonics are contraindicated. Antispasmodics, in as far as they allay irritability, and are tonic in their properties, are beneficial in the two first classes. We thus perceive, that the same general principles should govern us, in the employment of tonics, as in the use of local depletion; and that the two sets of remedies are by no means incompatible.

In Mr. Torbet’s case, the “leeches, blisters and issues” were either inappropriate at the commencement, or they were used to excess; or continued longer than was necessary. We think it doubtful whether any permanent irritation, such as that of an issue, is

adapted to these cases. The danger is, that after the affection of the spinal chord has been removed, the irritation of the issue may react upon an organ so extremely impressible as the medulla spinalis; and thus the remedy employed becomes a source of renewed disease. We greatly prefer the tartar emetic ointment, which can be made to produce any amount of inflammation we choose. It should be discontinued as soon as the complaint appears to be effectually subdued.

In no disease has the treatment been more diversified than in tetanus; and a few cases appear to have been cured by almost every method. It is plain that no uniform plan can be fixed upon, until we are agreed as to the pathology. If it is true, that it originated either in functional derangement, or inflammation of the spinal chord, or its envelopes, our attention should be chiefly directed to that organ; and our treatment should be conducted on what are considered established principles. Dr. Symonds, in the article Tetanus in the London Cyclopædia of Practical Medicine, makes the following remarks: "The periodicals of the last twenty years furnish several cases, in which morbid appearances were said to be found in the spinal chord or its envelopes. But since anatomists have learned to place less reliance upon mere redness and turgescence, as indications of inflammation during life, the profession have become less and less satisfied, as to the constant presence of morbid changes in the spines of tetanus patients. Of the cases communicated to Hennen, many presented the chord and its membranes in a perfectly natural condition, and he had reason to suspect that the apparent lesions of these parts were often due to the rude use of the chisel and saw. The unskilful mode in which we have often known the operation of exposing the contents of the vertebral column performed, leads us to consider the author's conjecture a very probable one. Sir B. Brodie could never satisfy himself that these parts were diseased. Dr. Elliotson considers the appearances described to be rather incidental than essential; and Mr. Morgan, after mentioning that in some cases cerebral congestion and increased vascularity or morbid deposits in the spinal membranes have been discovered, declares that in other cases he has looked in vain for the same appearances. The following passages in a lecture delivered by Professor Mayo, at King's College, has just caught our attention. 'In the museum of St. Thomas's Hospital, I am informed by Mr. Green, there are two specimens of the spinal chord, the membranes of which are studded with little cartilaginous and earthy flakes, taken from patients who died of tetanus. These small deposits did not, it is to be presumed, produce the tetanus, but they probably had made the spinal chord preternaturally irritable.' "

In the first place, as to the want of skill spoken of in the above passage. It ought not to be brought forward as an objection; it might be so in some instances, but Mr. Morgan, we may safely suppose, displayed equal skill in the examination of all his cases; and in some he found morbid appearances, in others not. It is certainly too, a great stretch of incredulity to insinuate that the eminent pathologists who have investigated this subject, have mistaken the effects of unskilful dissection for morbid changes. If this is not the design of the statement, it means nothing, the fact that some men have made this mistake, is no proof that others have.

In the second place, it is admitted, that turgescence of the larger veins, is not alone indicative of inflammation; although it may possibly have been so regarded by some. But when the naturally transparent arachnoid membrane is red with turgid vessels, and associated with this, there are thickening and opacity of the same tissue with serous, sero-purulent, and sero-gelatinous exudation; and when along with turgescence of the vessels of the pia mater, there is softening of the medullary substance of the chord, it is absolutely impossible there can be any mistake. These appearances have all been frequently observed.

In the third place, as to the objection that in many cases no morbid structure can be seen, it has no validity, unless it has included in it the statement that death cannot be produced by functional disturbance of the spinal chord; and also, that no change of structure whatever, can occur, which cannot be discovered by the knife of the anatomist. Cases of insanity present themselves continually, in which no sign of disease of the brain can be detected; and yet nobody hesitates to admit that this organ must have been diseased. If there was organic disease the anatomist could not find it; if there was not, functional disease must have been sufficient to produce all the symptoms. There is no wonder is, that in a disease, running its course so rapidly as tetanus frequently does, that morbid changes are so often discovered. If the spinal chord is the seat of traumatic tetanus, its first morbid state is that of simple irritation; which may or may not go on to organic change. Inflammation does not necessarily follow irritation. Mr. Mayo thinks that in the specimens of spinal chord contained in the museum of St. Thomas's Hospital, there must have been preternatural irritability, which of course would predispose to morbid action. This functional disturbance may in many cases be of itself sufficient to cause death, and leave no evidence of its existence. There can be no doubt that the progress to a fatal termination, will be more or less rapid, according to the extent of the chord seriously affected; and the particular

vital organs upon which it concentrates its force. If the whole chord up to the tuber annulare, is violently attacked, the case will be much more alarming than if only a small portion is assailed. If the heart and the diaphragm are seized upon, some suppose it is impossible the patient should recover. Now it is not at all improbable that the viscera of the thorax and abdomen, in some individuals, have a greater sympathy with the spinal chord than in others. In fever some persons have much more pain of back than others. Where this sympathy is great, a less amount of spinal irritation will produce an equal effect; so that when we consider the various conditions of different individuals, and of the same individual at different times, we should not be surprised at such diversified results. An unpleasant odour, or the sight of a disagreeable object, will throw some persons into convulsions; while they have not the slightest effect upon others. It is thus obviously impossible to lay down any laws, either as regards the healthful or morbid condition of the human system, which shall be universally applicable.

If we do not regard tetanus as a spinal disease, to what organ shall we refer it? It is perfectly plain that the spinal chord is affected, either primarily from the wound, or secondarily from some other part. Mr. Joseph Swan, in a work published in 1825, states that he has found the ganglia of the great sympathetic nerve in a state of congestion or inflammation; and expresses the opinion, that these ganglia are the important parts of the nervous system to which the first irritation tends, and from which it proceeds to the rest of the nervous system. While Mr. Abernethy thinks the *digestive organs* are first in fault, and that the spine comes after. But surely it is a circuitous and unsatisfactory way of explaining the phenomena, to pass from the wound to the ganglia of the sympathetic, or to the abdominal viscera, and then to the spinal marrow, when we have a more direct rout, by the nerves going straight to this organ. We therefore consider it more rational to view the spinal chord as the second link in the chain of causation, and to refer all the affections of the thoracic and abdominal viscera, and the ganglia of the sympathetic nerve, to their connexion with it. This view of the subject too, appears the more rational, when we consider that the sympathetic system of nerves is, as far as we can discover by experiment, destitute of impressibility. The division by the knife of the branches of this nerve is unproductive of pain. We *infer* that the sympathetic nerve communicates a peculiar and low degree of sensibility to the parts it supplies, chiefly from the fact that it is distributed upon these parts, and we cannot believe it to be entirely useless. And this low sensibility is a wonderful and wise provision of nature. The organs upon which this nerve is ramified, are so important to life, that if they were as easily disturbed as

those which are supplied by the spinal nerves, the term of our existence would be exceedingly brief. If, for example, spasm of the heart was as common as of the voluntary muscles, such as cramp of the calf of the leg, life would be held by a very precarious tenure. If then it is comparatively so difficult to excite action in the sympathetic system of nerves, and so easy in the spinal system, is it not more rational to look first to the latter? Evidence to corroborate this view, may also be derived from the state of the pulse, which, during the interval of the paroxysms, is nearly natural. We are therefore disposed to regard tetanus as primarily and essentially a disease of the spinal chord and its membranes, in the traumatic form produced by an irritation propagated from the original seat of wound.

Previous to discussing the treatment, we will make a few remarks on the value of pressure alongside of the spinous processes, as an evidence of disease within the spinal canal. The great tenderness of the skin we have seen, must and does proceed from disease of the contents of this canal. Touching the skin lightly must then affect the chord, by the sympathy of continuity and identity of texture; the nerves proceeding directly from their origin to the surface. This symptom is thus derived from the anatomical and physiological connexion of the parts. But can we by pressing alongside of the spinous processes, apply any of the force to the chord itself, or to the nerves at their roots? We have seen in the case of M. F. that slight pressure produced contractions of the little and ring fingers; and in many cases pain is produced in the parts opposite the point where the pressure is made. Thus pressure on the first or second cervical vertebra, will cause pain of the brow; on the second or third, about the larynx; on the lower cervical, about the inferior part of the trachea, and at the top of the shoulder and in front of the chest; and so on to the lower termination of the spinal column. Now is the force of the pressure received upon the roots of the nerves after they have passed out of the canal through the inter-vertebral foramina, or upon the chord itself? The inter-vertebral foramina are of considerable size, and are filled up by a loose cellular tissue surrounding the nerves and blood-vessels; so that perhaps it is not impossible, that the chord itself may receive some portion of the pressure. If, however, it is so well protected that no part of the force can be applied directly to it, through the intervening parts, we must suppose that pressure upon the roots of the nerves after they have passed out from the canal, is sufficient to produce the pain and contractions to which we have referred; and this answers every purpose in establishing our diagnosis, inasmuch as we have no proof that the nerves immediately exterior to the canal are ever affected, independent of the chord.

If then we suppose tetanus to be an irritation of the spinal chord, in many cases passing into inflammation, the treatment should manifestly be antiphlogistic; and all pure stimulants are inadmissible; and if the inquiry is made, how it has happened, on this supposition, that some have been cured by stimulants; we reply, that the most injudicious treatment of any disease will not kill all. Some will recover in spite of the union of apparently every possible adverse circumstance.

Blood-letting as the most powerful antiphlogistic remedy we possess, comes first to be considered; and here we are decidedly of the opinion, that general bleeding has been carried too far; and too often to the exclusion of local, by cupping and leeches. The ferociousness of the disease has, in the great majority of cases, caused all the remedial measures to be carried to extremes; so that if the disease did not kill, the remedies surely would. We were informed by a physician to the British forces, who served through the Peninsular campaigns, that a quart of laudanum was sometimes given in the course of twelve or fourteen hours; and a drachm of solid opium every two hours; and the patients all died. Mr. Abernethy once found thirty drachms of solid opium undissolved in the stomach; and 110 bottles of port wine have been administered to one man, but he managed to recover; so that port wine cannot be so bad a thing as one might suppose; at least it must have agreed with this individual. In numerous instances, however, wine as well as brandy have totally failed. General bleeding is not indicated, for the most part, except as an antispasmodic; and surely it is too debilitating a remedy to be employed extensively for this purpose. The pulse does not denote that high action of the arterial system which demands copious bleeding; on the contrary, during the paroxysms, it is hurried and irregular; and in the intervals, nearly natural. Occasionally it is somewhat full and hard. “Dr. O. Beirne, who was stationed with the artillery in the Peninsular war, where he saw about two hundred cases, and who had the sole charge of the wounded officers and men of the artillery at Brussels, after the battle of Waterloo, states that he never saw a case of tetanus accompanied with fever.” The truth is, at the commencement it is more a disease of irritation than inflammation; but no doubt it soon passes into this latter stage. Still the heart is not even then excited to high action, as in phrenitis. The general irritation of the nervous system, would seem to have more of a depressing influence; inasmuch as the pulse speedily becomes very frequent and small, and rather feeble. In the cases of individuals of robust frame and great vigour of constitution, with a full, hard, strong pulse, moderate general bleeding may unquestionably be beneficial. We think, however, that this is one of those diseases in which the local

abstraction of blood, by leeches or cups, is more clearly indicated than perhaps in any other, and we have been surprised to see it so little insisted on. Large quantities of blood we know may be abstracted in this way; and the vascular communication between the skin and the spinal chord is almost as direct as the nervous. We would, therefore, greatly prefer free cupping along the course of the spine, or the application of leeches, one or both, to the use of the lancet. If any one part is more tender on pressure than others, from this part blood should be first taken; and every repetition of it should be partly from the same vicinity, as long as the tenderness continues.

Next to the local abstraction of blood, we think counter-irritation to be deserving of confidence; and for this purpose it is obvious we must employ some agent whose action will be immediate. The tartar emetic ointment and blisters are too slow in their action. It is very desirable that the morbid action should receive a check as early as possible; and the delay of even a few hours is not unattended by danger. Counter-irritation cannot therefore be established too early after depletion. Fatal disorganization speedily occurs in the worst cases, when the disease is allowed to proceed unmolested; after which our best means can only mitigate the severity of the patient's sufferings. The actual cautery, or the moxa, would probably be most efficient; but in private practice it would be difficult to prevail upon patients to submit to their application. A very good substitute for them is the caustic potass, which should be rubbed upon those parts where the cups or leeches had been applied, so as to produce considerable inflammation of the skin without destroying it. The potass is possessed of this superiority over the actual cautery and the moxa, that more extensive inflammation can be produced, a larger surface can be acted on, and the skin not necessarily killed; and as this tissue has greater sympathy with the spinal chord, from the large number of nervous filaments distributed upon it, than the subjacent tissues, especially the subcutaneous, which has but few nerves in a given space, the nerves passing through it in comparatively large branches; and from the sentient extremities of the nerves being ramified upon the skin, it is very important that inflammation should be kept up in it with as little injury to its sensibility as possible; so that where the actual cautery or the moxa are employed, they should not be applied to an extensive surface. If the symptoms do not manifest a disposition to yield, cups or leeches should be applied to other parts not yet touched, followed immediately by the caustic potass. In this way the whole back may be gone over, if the unyielding nature of the symptoms require it.

For the purpose of controlling the spasms and preventing that

derangement of the circulation, which must inevitably follow such violent muscular action, by hurrying the blood from the extremities and the surface, towards the heart and lungs, and other central and vital organs, some of the preparations of opium should be administered; and the acetate or sulphate of morphine are to be preferred, as more definite and certain in their operation. They should be given in solution in distilled water, and in large doses, more or less frequently repeated, according to the violence of the spasms. Opiates are to be employed, not with the expectation that they will have much effect in advancing the cure, but simply to allay irritability, and mitigate the spasms. No more should be given than is necessary for this purpose.

The frequent repetition of powerful doses of drastic purgatives, such as scammony and gamboge, combined with calomel, and succeeded by salts and senna, and croton oil, have been thought by some writers to be almost sufficient by themselves to effect a cure. However this may be, there can be no question but that they are very useful assistants. The bowels should be freely purged, and to accomplish this the most powerful cathartics are required. It has been thought that the counter-irritation along the course of the alimentary tube is beneficial. We can scarcely imagine that any amount of irritation which can with safety be applied in this way, would be felt in the slightest degree by the spinal chord, when labouring under that intense irritation which produces tetanus. But the excitation of the excreting organs of the abdomen, and the consequent discharge of offensive matter, cannot but be serviceable. To show the quantity of cathartic medicine which may be given with impunity in some cases, we transcribe the following from the *London Cyclopædia*.

"In a case related by Dr. Briggs, the following quantities were administered. During the first twenty-five days, calomel gr. 320, scammony gr. 340, gamboge gr. 126, powder of jalap ℥v. and ℥vii. ss. infusion of senna, with tincture lb. x. $\frac{2}{3}$ colocynth pill ℥iss. and gr. 45; of which the greatest part was taken within the first week, namely, calomel 280, scammony 260, gamboge 110, jalap ℥iij. gr. x. infusion lb. v. 5-6. The quantity given in little more than forty-eight hours, is perhaps unprecedented in this country, amounting to, scammony gr. 210, gamboge 89, jalap ℥i. and Div. infusion lb. ij. $\frac{1}{3}$, calomel gr. 80, and all this without causing either sickness or griping, but on the contrary with the most decided benefit."

The prussic acid, from its supposed power of allaying irritation of the nervous system, is perhaps deserving of farther trial. It may be given in conjunction with the remedies already mentioned; and the extent to which it is carried must be determined by its apparent effects; of which, however, it is not easy to judge, when it is associated with other agents. We would not recommend the administration of enormous quantities, as its depressing properties might exhaust the vital energies to a fatal extent.

On the foregoing remedies we would rely in cases either of idiopathic or traumatic tetanus. We are inclined to think that the great want of success hitherto, may be ascribed to two causes; 1st, not acting with energy in the incipient stage, and 2nd, trusting too much to specifics. We have seen a little laudanum given, increasing the quantity as the spasms became more violent, with some gentle cathartics, during two or three days; thus wasting those precious hours, which should have been employed in nipping this ferocious malady in the bud. A late writer of respectability says, "that it is incumbent on us to look about for new remedies, since the old ones have all failed;" and he suggests a trial of strychnia; not even on the well defined principle of homœopathism, which however irrational is perfectly clear; but because "such agents prove by their occasional production of symptoms like those of the disease to be treated, that they act on the part which is the seat of that disease, and consequently that there is a probability that in their operation on that part, (whether it be in a sufficient degree to produce a similar disease or not,) they may effect a beneficial change."—(Dr. Symonds, London Cyclopædia, art. Tetanus.) It would seem from this, to be of no importance to inquire whether the known properties of the remedy are adapted to the character of the disease. Nearly all the remedies which have been employed, have been prescribed on this principle. It was expected they would have some specification upon the disease wherever it might be located; and as long as we continue to act on this empirical plan, we must certainly fail in a majority of cases. Indeed the probability is, nay, the certainty, that we shall more frequently do mischief than confer benefit.

In traumatic cases we object to the application of irritants to the wound. They can only increase the inflammation of the injured nerves, which, instead of lessening the irritation of the spinal chord, must necessarily add to it. If the wound has healed, blisters to the skin, directly over it, as counter-irritants, will be serviceable. If it is still open, fomentations and emollient poultices are plainly indicated.

In the numerous other remedies mentioned in the books, we confess we have no confidence.

If hydrophobia is an irritation and inflammation of the upper part of the spinal chord, affecting chiefly the medulla oblongata, at the origin of the eighth pair of nerves, as some are inclined to believe, the same plan of treatment, confined as much as possible to the upper part of the spine, we should think would give the greatest promise of success.

REVIEWS.

ART. X. *Des Aliénés. Considerations, 1.^o sur l'état des maisons qui leur sont destinées, tant en France qu'en Angleterre, sur la nécessité d'en créer de nouvelles en France et sur le mode de construction à préférer pour ces maisons; 2.^o sur le régime hygiénique et moral auquel ces malades doivent être soumis; 3.^o sur quelques questions de médecine légale ou de législation relatives à leur état civil.* Par G. FERRUS, Médecin de l'hospice de Bicêtre, médecin consultant du Roi, &c. &c. 8vo. pp. 315: Paris, 1834. (Imprimé par ordre du Conseil-général des hôpitaux et hospices du Paris.)

On the Insane. Considerations, 1st. on the condition of the Insane Hospitals in France and England, on the necessity of erecting new ones in France, and on the best plan for such institutions; 2nd. on the hygienic and moral treatment of the insane, and 3d. on some medico-legal questions relative to their civil condition. By G. FERRUS, Physician to the Hospital Bicêtre, &c. Paris, 1834, 8vo. p. 319, with a plate and table.

However widely men may differ in opinion respecting the efficacy of therapeutic agents, or the importance of pathological anatomy, no one can doubt the positive utility of that branch of medicine which is denominated Hygiene. At no period in the history of our country could a book of the above unpretending title, which contains so much that may be useful both to mental and physical health, have been more interesting. The population returns show a vast increase of lunatics and idiots, and there is a movement in many of the older states in favour of establishing public hospitals for the reception and treatment of the insane.

The author of the work before us, who is favourably known on the other side of the Atlantic, is a gentleman of eminence in his profession, and has been for many years physician in chief to the insane department of the hospital of Bicêtre, to which establishment all the male pauper lunatics of Paris are sent. His constant observation there of the treatment, location, classification, clothing, feeding and employment of 700 lunatics gives to his opinions the highest value. And whoever has followed him in his official visits can bear testimony to the zeal, philanthropy and ability with which he performs his important duties. The numerous improvements which this institution has undergone of late years, have been materially advanced if not suggested by M. Ferrus.

His work is divided into two sections. The *first* is devoted to asylums for the insane in England; the second section, which is subdivided into five chapters, comprises in the 1st chapter, some statistical and other observations relative to the various lunatic asylums of France. The 2nd treats of improvements made and to be made in the hospital of Bicêtre. In the 3d are pointed out the general rules to be followed in the formation of plans for insane hospitals. In the 4th the hygienic and moral treatment which various diseases in general require, are spoken of—and the 5th chapter is devoted to the consideration of some new and important questions in legal medicine.

We will not attempt to place before the reader all the objects of the author's *coup d'œil* of British charitable institutions. He found in them many things novel and very unlike those of his own country. But what may seem strange to a Frenchman would be familiar to an American, whose institutions are derived chiefly from England, and whose charitable establishments resemble those of the mother country in many particulars.

In France the charitable, like the literary and scientific institutions, usually emanate directly from the government; and the few that are founded by private munificence are soon placed under the *surveillance* of public authority. In Great Britain and America, hospitals and benevolent establishments are founded for the most part by philanthropic individuals or associations, and are entirely uncontrolled by government. They are under the direction of men who derive no other compensation for their services than that which arises from a consciousness of doing good.

In Paris, the charitable establishments are under the direction of a general council and of an administrative commission. The members of the first are named by the king, of the second by the minister of the interior; and all are subject to the jurisdiction of the latter.

In the different parts of the country and in the communes, the council and commission are appointed indirectly through the prefects by the king, or directly by the prefects themselves. Each member of the administrative commission of Paris receives a salary of 1500 francs per annum. Those of the departments perform their duties, which are comparatively limited, gratuitously. The revenues of the charitable establishments in France are derived from the following sources:—

1. Realized and fixed property (*biens fonds*,) either in lands, houses or public stock.
2. Legacies and donations.
3. Money paid by persons received into the hospitals and hospices.
4. Monts de Piété.
5. Theatres and other places of amusement.
6. Public verification of weights and measures.
7. Confiscations and fines.
8. Excise.

The revenues of similar establishments in England are derived from rich endowments, and from voluntary contributions; each institution having an independent and distinct government of directors

chosen from among the members or subscribers, and not responsible to any higher authority.

We will not stop to discuss at length the advantages or disadvantages of these respective systems. If the administration of *some* of the English establishments be conducted with more energy, that of *others*, owing to local causes, is less exact and efficient. The charities of France, being under one general system, are conducted with more equality and economy; and their benefits to the sick and infirm of the nation at large are more evident and satisfactory.

Notwithstanding the advantages that may result from this national method of management, the plan adopted in England and followed here, is more conformable to the spirit of our institutions and the genius of our people.

A striking difference between the French and English charitable institutions consists in the large number of persons employed in the former, compared with those in the service of the latter. In the French pauper asylums for the insane, one keeper or nurse is usually allowed to ten patients. M. Esquirol thinks this insufficient. At his own private establishment each patient has at least one attendant, and in some instances more. At the royal hospital of Charenton, the proportion is much greater than one to ten. In this establishment, where there are usually 500 patients, there are no less than 196 "employés." The following is a list of some of them. Of course all the subordinate officers, attendants and servants, forming the great mass of persons employed, are omitted.

Medical Department and those attached to it.—One physician in chief; one adjunct; one inspecting physician; two house physicians, (élèves or advanced students;)—one surgeon in chief; one house surgeon or advanced student;—one apothecary in chief; one apothecary's assistant (an advanced élève;)—one surveillant, (supervisor) himself a physician, his duty being to execute the orders of the physicians; one surveillante, (matron) with duties similar to the last; one infirmier en chef, (head-keeper or assistant supervisor;) one infirmiere en chef, (sub-matron.)

Officers not medical.—One director, superintendent of the whole establishment;—one secretary or chief clerk; many clerks;—one steward; one under steward; many clerks;—one "receiver," (receiver of rents and other funds;)—one book-keeper; several clerks;—one architect; one master mason; one chaplain.

All these officers, except the physician in chief, adjunct physician and surgeon in chief, reside on the premises and form a part of the regular household. The physician and surgeon in chief reside in Paris—the first visits the hospital three times a week—the last occasionally. The adjunct physician lives in the vicinity of the hospital, which he visits four times a week.

As the government committee visits the establishment but four times a year, the ordinary duties of inspection fall on the physicians.

Compared with the above list, the number of officers in the service

of English hospitals will be found small; and the number employed in American institutions much smaller.

Our author takes a general view of the hospital establishments of England, and makes various strictures on their "materiel," "personnel," and the management of their medical departments. He speaks of the superior advantages they might have enjoyed from their munificent endowments, over those of France, if their directors had taken proper means to procure suitable models for their edifices;—the French having been obliged for the most part to use old structures, originally intended for other purposes. He very liberally admits the cleanliness and good order of English hospitals, but expresses some surprise, that in establishments well supplied with water, so few baths were in use; and instances the hospital of the rich and populous city of Manchester, which has but one bathing tub for 170 beds. He acknowledges the superior degree of neatness which the frequent repetition of painting gives to the interior of British hospitals, but claims for those of France the advantages of better beds and bedding. There is one thing, it must be admitted, in which the French hospitals excel all others that we have seen, either in England or America, which is that the beds are not only supplied with numerous changes of sheets, pillow cases, &c. but large quantities of body-linen of every description are provided for the use of the patients. When the deficiencies of the poor in this respect are considered, we cannot too highly praise that philanthropy which has so generously supplied their wants.

M. Ferrus in extending his observations to the "personnel" and internal police of English hospitals, speaks of the difficulties which the sick are obliged to encounter in order to gain admission. He points out the want of a proper classification, as seen in the indiscriminate mingling of adults with children, and the treatment of too great a variety of diseases in the same wards; while he alludes with very just feelings to the advantages which the establishments of his own country possess in the sisters of charity. "How much happier are we in this respect than our neighbours! how much to be preferred are the services of the sisters of charity, whose devotion is derived from a principle far more elevated than all human calculation!"

The third chapter of the first section of the work is devoted to the medical services of English hospitals. His strictures on the functions of the apothecaries attached to English hospitals, are very just.

To this officer (the apothecary) "are granted the most varied attributes: always present in the hospital he makes up by his regular visits the too infrequent ones of the physicians; and in their absence orders medicines, modifies prescriptions already made, and thus becomes in fact the most important member of the medical staff. This prerogative granted to apothecaries seems equally singular and incomprehensible. Although the persons who fill these stations may in general be very respectable for talents, and before having such important functions confided to them, obliged to give some proofs of medical acquirement; the almost unlimited confidence which is granted to them, does not seem to be without danger."

We pass over the author's comparison of the pharmaceutic prepa-

rations of the English and French hospitals, and his remarks on the manner of conducting medical and surgical education at the former.

It is but a few years since the insane in one of the most enlightened and civilized countries of christendom, were treated with a barbarity worthy only of the dark ages. They were shut up not for the purposes of a rational treatment, but to rid society of trouble or danger, and in many instances to serve the selfish ends of relatives. The law of force acknowledged no milder means of restraint than chains, and the lash was a regular medical prescription. It is not long, indeed, since the latter had a *royal* celebrity. To the quiet, though persevering and efficient philanthropy of the Society of Friends is Great Britain mainly indebted for the present enlightened system that directs the management of her asylums; and the name of Tuke will not be forgotten by a nation that justly cherishes the recollection of a Howard.

The investigations by a committee of the House of Commons in 1816, developed such an amount of enormities actually practised in some of the lunatic asylums, that a general reform in these establishments throughout the kingdom was determined upon. Since that period, various salutary statutes have been enacted for the relief of the insane, and for the better organization of public and private institutions. A law has been passed, authorizing, but not obliging, each county in England to construct a Lunatic asylum. All the buildings erected under this act are of a much higher order than those in existence previously. They are constructed according to the modern views of classification and regimen, and their inmates are treated on the most enlightened and liberal principles. But in Ireland the system of pauper lunatic asylums is most complete, and we think we shall be borne out by facts in saying, that as a whole, the hospitals for the insane in that country approach nearer to perfection than those of any other. The founder of this system is the Hon. T. Spring Rice, whose exertions in behalf of his native land, have in this respect, at least, been eminently successful. To insure to every part of the Island the benefits of a general law, Ireland was divided into eight districts, set apart according to the population; and each of these districts obliged to supply itself with a pauper lunatic asylum, which, together with those already established by the munificence of benevolent individuals, are supposed to be sufficient for the wants of this unfortunate class. It is in contemplation, as a part of the general plan, to put up a separate building in each district, for such patients as have passed a certain period under treatment in the asylums already in use, and have been pronounced incurable. Each of these district establishments is under the direction of a committee, named by a central board at Dublin; which originates all new measures, supervises the finances, appoints officers, and, in fine, passes upon every important act submitted to it by the local trustees. The plans of these buildings are in general very good, and they are well adapted to classification, ventilation and convenience. Had M. Ferrus visited Great Britain a few years later, and extended his exa-

minations to Ireland, he could not have failed to eulogise her institutions for the insane. If their general plan and organization be worthy of commendation, the manner in which they are conducted is still more so. A proper degree of economy reigns over all, while an unsurpassed cleanliness pervades every department. The helpless inmates are treated with the utmost kindness, and are supplied with the means of useful occupation. The loom, the spinning wheel, the needle, the spade, the trowel, the plane, the saw, and other implements, are here seen in the hands of the insane. The result cannot but be highly beneficial to those employed and to the public. If the subject and limits of this article permitted, we could particularize those institutions that struck us as being models of excellence.

To return to the asylums of England; it was mentioned that a law was passed *authorizing*, but not *obliging*, the counties to establish pauper insane institutions. The consequence of leaving the local authorities to judge of the expediency in this matter is, that many of the counties are without any provisions for the comfort and treatment of the insane.

Previously to the enactment of this law there existed, in various parts of England, lunatic hospitals, which had been established by associations of public spirited individuals, and in which the middling classes, paying for their own board, were received and treated with the poor supported by public charity. Several of these are still in existence. This is a radical defect; and, in a country containing a large number of lunatics belonging to each class of society, is without any reasonable excuse. It is a vice which yet necessarily exists in our own country, but it is hoped the different States will soon have a sufficient number of strictly pauper asylums for the relief of other establishments; and in the former, none but the destitute should be received; for, says our author,

“How can perfect order be introduced into an establishment where there is inequality in the station of the patients, and in which the poor, supported by the charity of parishes, are placed by the side of men paying a considerable rate of board; witness the superior accommodation of the latter? We can readily judge of the impression produced upon the indigent by an *apparent* injustice which it is impossible for him duly to appreciate, or of which he can not see any satisfactory explanation.”

“Let us not forget to observe that it is in this kind of establishment above all, that the want of a unity of action, and of a firm and constant direction, is so perceptible; and that, moreover, the authority and even zeal of the physicians are so often counteracted by the superintendents or directors; and sometimes even paralyzed and shackled by the subscribers or founders, whose knowledge is usually far from equalling their charity.”

Our author, who visited the principal lunatic asylums in England, gives a short sketch of *each*, through which we will not follow him; but content ourselves by presenting to the reader a comparative view of two of the most celebrated—the one the most *ancient*, the other among the most *recent* of British establishments; viz. Bethlehem and Hanwell, both belonging to the metropolis. “In the year 1547 the priory of Bethlehem was given by Henry VIII. on his death-bed to

the city of London, and a few years after set apart for the treatment of the insane." In 1675 this house was rebuilt by the city of London, after the plan of the palace of the Tuilleries, which gave great offence to Louis XIV. In 1812 its location was changed, and the present hospital erected, at the immense expense of about half a million of dollars. Its annual proper income is \$90,000, besides \$13,000 from government for the support of criminal lunatics; so that none of the inmates are maintained by their friends. It has beds for 260, of whom 60 are criminals.

Although the building presents a magnificent facade, and every part of it is on a scale of grandeur which few or no similar structures approach; yet the unplastered brick walls of the cells, the small loop-hole windows at the top of the ceiling, and the iron gratings, impress the visiter with a feeling that he is in a prison. The predominant idea of the architect seems to have been that he was forming a plan for the confinement of 60 criminals, and not for the reception of 200 innocent beings deprived of reason; while in the general bearing of the officers towards the patients, and in their manner of receiving visitors there is a perfect harmony with the design of the artist. It is to be hoped that the spirit of reform which has of late years been prevalent in England, has had its proper influence in the government of this splendid charity.

When we visited it some five years since there was a degree of reserve, suspicion, arrogance, and want of common civility on the part of the resident medical officer, whose duty it was to accompany us, that was equally amusing and offensive. Our examination of the various parts of the establishment, which was made from other motives than those of idle curiosity, necessarily suggested many questions. These were from time to time answered very cautiously and abruptly, until the suspicions of the gentleman were no longer controllable; when, fixing his eye upon his unsophisticated questioner, like some awful magistrate of the police about to fasten guilt upon a suspected evil doer, he exclaimed, "what do you mean, sir?"—"what do you wish to find out?" There may have been something national, something of "the universal Yankee nation" both in the manner and number of our queries, and we therefore disclaimed any design against the institution. The reserve of this individual as to the means of management and medical treatment, reminded us of a remark of one of the most distinguished surgeons of London, "that there was more mystery and quackery in the treatment of the insane, than in any other branch of the profession."

A very absurd custom prevails here, as in other similar institutions in England—that of requesting every casual visiter to write, in a book kept for the purpose, his opinion of the establishment, after hastily running through it. This is too much like inviting a man to partake of your hospitality and then asking his opinion of your table. It would be uncivil to say any thing disparaging, so the book is nearly filled with indiscriminate eulogium. Occasionally, however, when the

visiter happens to be more discerning and conscientious, the establishment is "damned with faint praise."

Considering the munificent endowment of this charity, and the advantages of professional ability which it ought to possess in a city replete with medical talent, it is far behind the age.

Little has been done for the purpose of employing the patients and diverting their minds from the subjects of morbid thought. We do not remember to have seen either work-shops for manual labour, or a reading-room or games of amusement. The grounds though large for an institution located in a city, are too contracted for the recreation of so great a number of patients, and the everlasting view of brick walls cannot but be irksome.

Though this establishment can accommodate as large a number as 260, only from 220 to 250 were there at the period of our visit. If the large income be divided by the first number, there will be a result of more than \$7 50 cents per week for each patient. When we compare this with the rate that parishes pay in the same county to the Hanwell asylum for the support of their paupers—(a sum under \$1 50 cents)—and when it is considered how much better they are treated than the pensioners of Bethlehem, how much more liberty they enjoy, and how much more rational and curative their management, we are surprised that the "ancien régime" of the institution in question is still suffered to exist. It cannot be possible that the whole income is expended; and if not, why are not the accommodations extended? According to the present system none but curable patients are admitted into the civil department; and if they do not get well at the end of a year, are turned out. But as at St. Luke's (an institution of far less pretensions, although under much better management,) there is a distinct class of *incurables*, composed of such patients as may have once belonged to the *curable* class, and of such others as may through favouritism have gained admission. This class might be very advantageously enlarged: work shops and other means of employment might be arranged for their use, and by their labours they might make some return to the institution for their support. But situated as Bethlehem now is, so imperfect are its internal arrangements that it would be improper to increase the number of its curable patients, when these may be so much better treated in establishments out of town.

We turn with feelings of relief and pleasure to the Hanwell Asylum, which has been instituted within the last six years, under the auspices of the magistrates of Middlesex, (according to the act of parliament before referred to,) for the insane poor of the county.

It is situated about eight miles from town, in a fertile and highly cultivated part of the country, surrounded by an ample enclosure of land for the purposes of gardening, and of furnishing the patients with suitable employment, and constructed after the most approved principles of architecture.

The inmates are suitably divided into classes, well clothed and fed, and supplied with various means of occupation suited to their

tastes and habits. They are under the enlightened and benevolent superintendence of Sir William and Lady Ellis, to whom more is perhaps due than to any other two individuals for the present improvements in the management of pauper lunatic asylums in England, and especially for the system of industry that now prevails there. Their manner of treating the unfortunate under their care is strictly parental, and the paupers of London, who may be supposed to be among the most depraved of the class, are governed with so much humanity, and are surrounded by so many examples of industry, that they are soon taught to respect themselves and to undertake some useful occupation that contributes in the most direct manner to their final recovery. By the last annual report of this establishment, it appears that in this community of 570 insane patients, no less than 320 are on an average employed. Their occupations are various, such as spinning twine, making baskets, picking, carding and spinning wool for mops, manufacturing straw hats, bonnets, &c. &c.; and we are told by Sir William in his report this remarkable fact, "that six persons have also been taught to make shoes within the year, who before were totally ignorant of that business." In addition, great numbers are employed in horticulture and labour in the open air. A chapel forms part of the institution. Here, besides the weekly services of the church, such patients as are in a suitable state, assemble like the members of an orderly household for morning and evening prayers. On these occasions the director conducts the devotional exercises, which can not be too much praised; their periodical return gives an order and system to the movements of the house; their solemnity impresses the insane with a proper sentiment of veneration that cannot but have a salutary influence on their hearts and minds; they are taught the important lessons of self-respect, humanity and self-government; they learn that they are not forgotten, and that if they can curb their wandering thoughts and restrain their wayward actions during the delivery of a sermon or the offering up of a prayer, they *may* do so for a still longer period, even when left to themselves. When we accompanied the director and matron through the various galleries and grounds, we were struck with the satisfaction which the performance of their duties seemed to give them, with their parental kindness, and with the respect and attachment of the patients to their persons. The best evidence that can be given of this is, that the matron does not hesitate to go unattended through galleries containing two or three hundred male lunatics from the lowest population of London.

In fine, when we consider the eligible site of the Hanwell Asylum, its construction, the distribution of its various parts, its adaptation to its object, the benevolent, liberal, and judicious policy which is every where seen in its management, and the never failing kindness of its officers; and when we on the other hand contemplate the confined location and imperfect construction of Bethlehem, the prison-like aspect of all its parts, and the destitution of the means of employment, together with the mean spirit that directs its administration and in-

spires its officers, we are reminded that while the former is a monument worthy the philanthropy of the present day, the latter is a monument of the barbarous benevolence of the age of Henry VIII.

Though it was our intention to pass unnoticed all the provincial and county asylums of Great Britain, we cannot forbear mentioning those of York, Lancaster, Glasgow, Perth, Dundee and Wakefield, as institutions under admirable management.

In examining British establishments for the insane, and particularly the institution last named, we were forcibly struck by one fact which it is believed has no parallel in any other country—the signal influence of woman in their management. Other countries have their sisters of charity, who are generally persons of limited education, destined from early life to fill subordinate stations, for which they have been specially brought up, and who are seldom found within the walls of lunatic asylums, and never in those occupied by males.

But England is the only country within our knowledge where females of cultivated minds and enlightened benevolence are seen to exercise, in institutions of this kind, a controlling influence. And why should not the attention of this sex to which the world is so much indebted for the propagation of various schemes of benevolence in distant lands, be directed to charities at home? Men may construct proper buildings for the insane, investigate their diseases philosophically, and apply to them the rules of art and the lessons of experience, but it is the more peculiar province and power of woman to enter into the feelings of the unfortunate, and to console the afflicted—and her sympathy and kindness are frequently more efficacious in ministering to a mind diseased than the science of the physician, or the drugs of the *Materia Medica*.

The Wakefield Asylum contains above 300 patients of both sexes, who are all paupers from the lowest classes of society. One of the most active and efficient personages in the management of this institution is a lady in the prime of life, endowed with superior intelligence and refinement of feeling and animated by a noble benevolence; she entered upon the duties of her station determined to sacrifice the prejudices of education in the great cause of philanthropy. She may be seen visiting the various parts of this great establishment, superintending its domestic concerns, traversing the male department frequently unattended, soothing the disconsolate, encouraging the humble, rebuking the insolent, ministering to the sick, and carrying with her, wherever she goes, order and comfort and consolation and peace.

M. Ferrus after completing his observations on the most important of the English establishments, and on the only two of note which at the time of his visit existed in Scotland, and finding in them much to praise and something to censure, returns to those of his own country. He remarks, it was not until the beginning of the seventeenth century, that the insane inspired any sympathy,—that Vincent de Paul was the first who preached in their favour with enthusiasm, and that from this period they began to be admitted into the hospitals, where,

however, they did not for a long time receive that kind of treatment which their condition required.

“For the first step towards the amelioration, or rather towards the formation of a suitable medical treatment, France is entirely indebted to Tenon, who in a memoir published in 1786, attracted the attention of a great number of philanthropists. At the head of these should be placed the venerable la Rochefoucauld.”

“In 1791 this virtuous citizen made to the *assemblée constituante* a report, whereby he disclosed the miserable state in which the insane were then languishing.” “Some years after, cells designed exclusively for insane females, were constructed at the general hospital; but these cells may now be regarded as a monument of barbarity; low, damp, cold, built too close to each other for a free circulation of air, without any means of heating them,” &c.

During the years which immediately followed the report of la Rochefoucauld, and which were marked by such unparalleled political commotions, far more instances of insanity were noticed than had ever before been known to exist. This, though owing chiefly to the moral tempest that was sweeping excitement and desolation far and wide, and which reached every class of society, may be in part accounted for by the direction of public attention to the subject.

“The difficulty of properly treating the insane at the Hotel Dieu, determined the government in 1802 to place them provisionally at Charenton; from whence, after a sojourn of three months, the incurables were sent, according to their sex, either to Bicêtre or the Salpêtrière. These two latter establishments subsequently became the only places of reception for the insane, whether of the curable or incurable classes, and thereupon underwent great ameliorations.”

“Suffice it to say, thanks to the impulse given by Pinel, and to the enlightened aid of the physicians who applied his precepts, the proportion in the number of cures rapidly increased in the hospitals of Paris. This example brought about a very desirable amelioration in some other parts of France, yet there exists even now but a very small number of special establishments for the treatment of insanity.”

M. Esquirol, whose writings on insanity have ranked him among the first physicians of the age, and whose philanthropy equals his talents, presented in 1819, to the minister of the interior, a memoir in which he recommended that lunatic asylums should be established in all cities where “*cours royales*” were held. This proposition has not yet been acted on, and the want of proper establishments is still felt throughout France.

“In those which receive indiscriminately all sorts of sick, the insane are generally placed in damp, dark and disgustingly filthy cells; the doors and windows are loaded with iron, and present a most frightful aspect. The beds are usually made fast to the walls, and are altogether unfit for the repression of the furious. When it is necessary to fasten a patient upon his bed, enormous rings of iron attached to the wall are had recourse to, while in some places these unfortunate beings are bound in an erect posture by means of girths to stakes or to the wall.”

“In the prisons the condition of the insane is still more deplorable, for they are there continually exposed to the jests of the vicious who fill these establishments, and who for the most part amuse themselves by ridiculing the delirium of their fellow prisoners.”

It is feared that this picture of the condition of the insane in France is not too highly coloured to represent their state in this country. The number of lunatics in the different states who require restraint and treatment is becoming large, while the proportion of asylums for their accommodation is comparatively small. In many of the states indeed there are no institutions at all, and in not one of them, it is believed, are they sufficiently numerous or extensive for the reception of all who should properly fall under their care. The consequence is, that there are probably at this moment, hundreds confined in jails and other improper receptacles; and many loaded with chains and treated in such a manner as to render their maladies incurable.

Though the special establishments of France are not what they should be, yet through the labours of the talented, learned and excellent Pinel, of Tenon, Thouret, Amar de Lyon, and Desportes, their condition has been much improved.

Our author next passes in review the various hospitals for the insane in his own country.

The emphatic remark, so often made, of the great French metropolis politically, that Paris is France, may with equal truth be applied to her institutions of science, medicine and charity. It is admitted by the French themselves, that out of the capital there is scarcely, with the exception of those at Rouen and Bordeaux, a well organized lunatic asylum. There are very few special establishments throughout the provinces, and those actually in existence are decidedly inferior to the asylums of Great Britain and Ireland. As before mentioned, in France large numbers of lunatics are confined in prisons and general hospitals.

We will not follow M. Ferrus in his descriptions of the various provincial receptacles for the insane, but select at hazard that of a single one, in order to give the reader a general idea of these establishments.

“Arriège.—The poor-house established at Saint Lizien receives all the insane of the department of l’Arriège. For the indigent (and these form the greater number) the treatment is gratuitous; for those who are able to pay, the price of board is fixed by the prefect, according to the means of each one; the sum, however, never being more than two hundred francs a year. The jacket, fetters to the feet, chains and hand-cuffs are employed as means of coercion. The diet consists of soup and fresh vegetables, and twice a week the patients receive in addition an allowance of meat. The pay patients and octogenarians alone have a small ration of wine.

“The insane are visited every day by the physician of the establishment, and the surveillance and service of these unfortunates are confided to special nurses, under the inspection of the director of the house. Each section has an airing-court and a warming place. The harmless patients enjoy full liberty in the extensive yards—they are all lodged in an isolated building of a single story in height. Both admission and discharge are ordered by the prefect. When the patient is cured his discharge takes place upon the report of the director; when not so, by the request of his family.”

The three great establishments for the insane in France, belong to

the department of the Seine, which includes Paris. They are the royal hospital of Charenton, the Salpêtrière and Bicêtre, and are located either within the walls of the city or in their immediate vicinity.

La maison royale de Charenton is a government establishment, and is under the immediate direction of a commission of five appointed by the minister of the interior. Insane officers and soldiers, as well as citizens, are received here. For the two former, government has provided and pays annually for their support 40,000 francs. The latter are supported by their friends and pay from 300 to 1300 francs per annum. Besides these sources of support, the establishment has a revenue of its own, amounting to 15,500 francs. Both males and females are admitted, and the number of patients usually varies from 480 to 500. The various buildings of which this establishment is composed, presenting an irregular and indescribable appearance, are situated between the villages of Charenton and St. Maurice, on the north side of the river Marne, not far from its junction with the Seine. They are placed pile above pile on the hill-side, which rises abruptly from the flat strip of land immediately on the margin of the river. Having been originally constructed and used for a monastery, the buildings, like most of the lunatic asylums on the continent of Europe, are extremely irregular and imperfectly adapted to their present purposes; but such modifications have been made, and so many new parts added, that classification is now complete.

An entire new building on the most munificent scale, and at the expense of 800,000 francs, has been erected within a few years, for the exclusive accommodation of such female patients as may be convalescent, or in a state to enjoy a certain degree of liberty; and to derive advantage from associating with others. This is called the third quarter. It is entered by a long avenue, lined with two rows of Linden trees trained in the French style. This leads to the principal staircase, which extends the whole breadth of the building, is easy of ascent, and is adorned with urns of cast iron, painted to resemble porphyry. On reaching the top and turning to the left we find ourselves in as delightful a court as can well be imagined for a lunatic asylum.

As mentioned before, this establishment is on a hill-side; which, in many respects, is favourable, being dry, sheltered from the north wind, and affording an extensive prospect. The building is of light coloured stone and encloses a square of 100 or 150 feet, around the whole of which extends a colonnade or piazza. The structures on the north and west sides are three stories, that on the east one story, while on the south is an open colonnade so guarded by ornamental grating as not to be in the least offensive to the eye, and affording one of the richest prospects that ever greeted the view. Overlooking all the rest of the buildings and the public highway, the beholder sees the valley of the Marne and its river, with its various bridges, rich plains, luxuriant vegetation, verdant groves, country seats, distant villages with their spires, and in fine every thing necessary to constitute a

varied landscape. The court itself is adorned with grass and shrubbery and has a fountain in its centre. From the landing-place above mentioned we proceed through a long dormitory with eighteen beds to the north extremity of the west side, where is a setting room. Here such patients as are industrious are seen employed in knitting and sewing. From thence we pass along the open colonnade on the south to that part of the building which faces the west side of the square. One part of the ground floor of this side is a dormitory, the other a hall where the patients take their meals or sit during the day and sew. The dormitories which are for a number of quiet patients are kept in an unsurpassed state of neatness. The beds are in the best French manner, with curtains, and each one is supplied with a chair, night table, &c. But the floors are of glazed brick, uncovered by carpets. The hall is well furnished with sofas and chairs of a light yellowish coloured wood, that give it a neat and airy appearance. Both dormitories and halls are warmed by ornamental earthen stoves. A wire netting forms the only security to the windows. That part of the building fronting on the north side of the court is divided into small rooms, neatly furnished and occupied by single patients. These chambers have each a window which opens under the colonnade. They are entered by means of a long corridor, extending the whole length of this part of the building, into which doors open. The stairway is constructed in the ordinary manner and guarded by wire-work. In the upper story are dormitories. On the north side and over the small rooms already mentioned, are private apartments with cabinets remarkably well furnished and commanding delightful prospects. These are destined for those patients who prefer greater retirement and are able to pay a high rate of board.

The bathing-room belonging to this quarter of the establishment is a model.

Adjoining this building is an extensive garden tastefully laid out, and adorned and shaded by shrubbery and trees.

A building on a similar plan is in contemplation for convalescent male patients.

The garden of this latter class is already every thing that can be desired. It is extensive and beautifully diversified, covering some 8 or 10 acres, extending to the summit of the hill in the rear of the buildings and joining the "Bois de Vincennes." The walks are numerous and lined with young elm and linden trees. Some command extensive and luxuriant landscapes; others are retired, and others again lead to clumps of trees tastefully grouped. Benches are distributed in various parts. Here patients are seen resting in listless attitudes—there they are walking under the shade and discoursing like so many philosophers—while yonder, another one is reading either alone or to a circle of listeners, and not far distant perhaps a party is sitting on the grass engaged at cards.

We have been particular to mention this pleasure ground, because it is so much superior both in beauty and extent to any thing of the

kind either in Europe or America that we hope it may be imitated in some of the institutions about to be established in this country.

Having said thus much of a small part of one of the best conducted institutions of the kind in the world, our space obliges us to dispense with any further remarks on the subject.

La Salpêtrière.—This establishment, though within the city walls, is in a remote part of Paris, on the south side of the Seine, and not far from the Garden of Plants. It is an hospice for the reception of the aged, infirm and indigent, as well as of the insane, being exclusively devoted to females. On the first of January, 1834, no less than 1670 lunatics of this sex belonged to the division of the insane. The numbers are increasing annually, and it is a remarkable fact that there are more than twice as many females in this, as there are patients of the other sex in the great receptacle for the male pauper lunatics of Paris.

Since the days of Pinel, who began the reform in the mode of treating the insane in France, the Salpêtrière has been regarded as a model. "But it must be admitted that for some years past it has stopped in its progress of improvement. The section of the imbecile, and that of the epileptic are the only ones that are isolated, and these are imperfectly so: the incurable and the insane under treatment communicate together, or rather are confounded; the baths are common to both, &c."

Of this immense number of female lunatics congregated together, comparatively but a few are curable and under treatment. On this class, of course, the greatest attentions are lavished, while the incurable, the idiotic, the paralytic and epileptic, though treated with kindness, are necessarily left very much to themselves. The consequence is, that the want of employment has begotten the worst habits. We can never forget the only visit we made to the most abandoned of this class in what is called the "grilles" in company with the physician. Man deprived of reason and placed in an isolated situation is reduced to a mere animal—how degrading to human nature the spectacle! how infinitely more so when such animals are collected in large numbers and their worst passions elicited by the intercourse!

With the best possible management the inmates of this establishment can never be as comfortable as they should be. Fourteen hundred incurable in addition to two or three hundred curable lunatics are more than can properly be taken care of in one establishment. It is impossible however to say how great an amelioration may be effected in the condition of the insane at Salpêtrière by the introduction of suitable employment. The physician in chief is M. Pariset, a gentleman distinguished alike for his great learning and the urbanity of his manners.

Bicêtre.—It is of the insane department of this great hospice that our author is physician in chief. Pinel began his labours here, but abandoned it for the more extended theatre at Salpêtrière. From his day until recently Bicêtre underwent no improvement; but since M. Ferrus has been at its head it has taken the lead of Salpêtrière. New

buildings have been added or appropriated, additional courts attached and the classification thereby rendered much more perfect.

It is now the prevailing opinion in France that all buildings for the insane should be limited to a single story. Upon this principle all the recent improvements at Bicêtre have been made. A new section, called "*le cour de traitement*," is arranged in this way, and is a model of its kind. Two rows of lodges are arranged on two sides of a court about a hundred feet square, joined together at one end by a solid wall built up so as to entirely exclude observation from without, and at the other by a light open iron railing, leaving to the patient a constant view of an extensive and beautiful landscape, including the village of Gentilly. A colonnade extends around the whole court, affording a delightful shelter from the sun and rain.

Among other improvements at Bicêtre is one which should not be overlooked in the construction of asylums in our own country. It is that of providing a place for newly admitted patients until their actual state may be learned by observation under the eye of a suitable person.

M. Ferrus observes, "at my request the admission of the insane will be henceforth considered only as provisional. For many years past a ward conveniently disposed, has received all the new comers who remain in this place of trial until their state is well ascertained."

But the most important improvement introduced at Bicêtre is the appropriation of a farm at a distance from the establishment to such patients as are convalescent, and may be benefitted by agricultural and other pursuits. This is a most benevolent conception, and if carried out, will perfect the course of treatment at this hospital.

The third chapter, which is devoted to the construction and internal arrangement of asylums for the insane, is so interesting and so full of instruction, that it is hoped we shall not be censured for making copious extracts from it.

"M. Desportes in his project for an insane hospital, published in 1824, assigns twelve different sections for each sex:—1. The furious under treatment. 2. The furious incurable. 3. The tranquil under treatment, to be placed in lodges (cells or single rooms.) 4. The tranquil incurable to be placed likewise in lodges. 5. The furious epileptic insane. 6. The tranquil epileptic insane. 7. The tranquil epileptic insane under treatment, to be placed in dormitories, i. e. in large sleeping apartments containing many beds. 8. The tranquil incurable insane to be placed likewise in dormitories. 9. The melancholic. 10. The imbecile. 11. Accidental diseases. 12. The convalescent.

"This classification may be used for the insane as they are generally managed, and may be applied to Bicêtre as at present organized. To reduce it to practice in a hospital destined to receive those only under treatment it would require modification, but would it be useful even in Paris to create a hospital of this kind? There is no doubt that it is a duty almost incumbent on the capital to found an asylum that may serve as a model in this species of architecture. I do not think, however, that it should be exclusively reserved for those patients who may be considered evidently curable; would there not in fact arise serious inconveniences from placing in distinct establishments the curable and incurable insane? The latter would find themselves, if we may be allowed the expression, abandoned; and by their isolation we should be deprived of the ad-

advantages of a comparative study of the different degrees of the disease; a study which is so necessary for the progress of science.

“But if it be advisable to bring together in the same institution all the varieties and degrees of nervous disorders, it is no less important to limit the population which a house destined for the treatment of these diseases should contain. This population should never be so numerous that a single physician may not direct the medical department, superintend even the most minute details of the service, and have a perfect knowledge of all the incurable and other patients. It is important, therefore, to have distinct establishments: first, for the sexes, and then for the different classes of society. To place together in the same situation both men and women, would be to open the door to the worst abuses, for it would be impossible to prevent entirely all communication. This would be a great inconvenience to the patients, as well as to the persons charged with watching and serving them.”

Though we entirely agree with the author, when he says the number of patients in a lunatic asylum should be limited, we dissent from him in his proposition to separate the sexes. It will be admitted that one of the best maxims for the management of the insane is, to treat them as nearly as possible like persons in their senses. Now, as it is generally considered that nothing tends more to perfect civilization than a proper social intercourse between the sexes, it would be very unphilosophical to deny the insane what is conceded to be useful to mankind at large. Besides, we do not hesitate to call in experience to the aid of reason: who that has had the management of the insane in an institution where both sexes are received, has not witnessed the decided advantage of bringing them together at the table, at social parties, and even at the dance? The physician cannot offer his patients any thing more likely to check their wayward propensities or reconcile them to their deplorable situations. Besides, to use the author's own argument applied to different degrees of the same disease, if males and females be separated, we shall lose the advantages to be derived from a comparative study of insanity in the different sexes. M. Ferrus goes on to speak of the impropriety of placing the rich and poor together in the same house. The difficulty of classifying patients in large establishments where they are all of the same grade in life, is so great, that it has seldom, if ever, been done satisfactorily. When in addition, various grades, according to compensation and other circumstances are established, it becomes almost impossible to make even a tolerable classification. It is humiliating to the affluent and educated man, who, though partially deranged may have a morbid degree of self-esteem and sensibility, to find himself under the same roof and in the frequent presence of the public pauper and the vulgar. Then, on the other hand, how much heart-burning and jealousy do the privileges of those more favoured by fortune occasion in the poor.

Many states of the Union are now taking measures to establish public asylums. Let them keep in view the importance of not confounding pauper with pay patients.

The following observations of M. Ferrus on the number that a lunatic asylum should contain, are worthy of translation.

“The number of persons that a hospital for the insane should accommodate

depends upon the state of these admitted. An asylum intended for the treatment only of mental diseases, should not contain more than a hundred and fifty or two hundred, if they be of the same sex, and twice this number if of different sexes, for in the latter case the service should be divided between two physicians, whose duties should be as distinct as every other part of the service.

When the population consists of patients of a single sex, but of whom some are under treatment, others idiots, incurables, &c. the number may be considerably augmented without disadvantage, provided the service continue to be directed by a single physician properly seconded. Experience has shown that in this case the number of insane in the same establishment may amount to six or seven hundred, that each patient may be frequently visited, and that the medical history of each may be traced with sufficient regularity. Such is very nearly the amount of insane population at Bicêtre; a population which has not increased since 1826, and in which are not reckoned more than a hundred or a hundred and twenty sick, whether of the insane under treatment, or of persons attacked by incidental diseases. I think, however, that in bringing together individuals of the same sex, and of the same rank as to fortune, it would not be proper to place in the same house more than four or five hundred, including the incurable as well as those under treatment."

In speaking of the asylums of England, our author remarks,

"Wherever I went, I found the buildings several stories high, in many instances evidently constructed after the models of penitentiaries, without suitable internal subdivisions, and with airing grounds far too circumscribed."

The following is a sketch of *his* plan for an asylum:—

"Around a common central point where all the general offices, as well as all the means of supervision should be united, I would have ranges of cells (*corps de logis*) for the noisy and excited, and buildings of a different model for the quiet. The cells intended for noisy patients to consist of two rows of lodges placed on the ground floor and united by a common gallery, serving the purposes of a covered walk. These cells starting from the central building, (where will be placed the bathing-rooms, the infirmaries, the parlours, the pharmacy, the clothes-presses, (lingerie) the kitchen, and the chambers of the principal officers,) to radiate from a common point, and to be separated from each other by gardens. This plan of building would keep off from the centre of the establishment the most excited and noisy patients. Some of those who are quiet, and those attacked by incidental diseases, located in the upper stories of the central building, would be found at hand if their condition should happen to require assistance.

"At the extremities of the rays formed by the cells for the furious, other buildings should be constructed for the accommodation of quiet patients. These buildings should also be surrounded by gardens, and so placed as not to command a view of the apartments of the violent."

We do not give the general outline of the author's plan as one we would recommend for adoption in this country, but as one from which some useful hints may be taken, and which, with a complete design, may be consulted in the original.

The following are the author's observations on the proportion of cells and dormitories that a lunatic asylum should contain, though we do not fully agree with him in his views on this subject. We do think, however, that in every establishment of the kind there is a certain number of patients who may with advantage lodge in the same rooms, but this number must be a small minority.

"The number of single rooms or cells should be calculated on the proportion

of patients under treatment, and particularly on the amount of acute cases the house is destined to receive. In establishments which admit only the insane under treatment, cells should be prepared for one-fourth of the population; in those intended at the same time for the insane under treatment, for incurables and idiots, single rooms should be provided for one-tenth; and for a fourteenth only (such is my opinion, judging from the requirements of Bicêtre,) in houses which receive in addition epileptics. It is obvious then that the number of cells does not follow that of the inmates, where these are composed indiscriminately of the epileptic and the insane. This disproportion arises from the fact that epileptics cannot be placed in cells even when delirious."

"If a paroxysm suddenly seize them, and they be left without necessary assistance, they may by a fall, or the position taken in falling, die of cerebral congestion or of actual asphyxia."

"Imbecile and incurable patients, who are not too much excited, are better off in dormitories where the supervision is general, and in these they should be allowed to remain only during the night. It would be unnecessary then to establish cells for them. Neither should melancholics be isolated, for they require that kind of excitement which may be derived from the society of other patients less abstracted than themselves; and the reunion of a certain number of lunatics, when their vicinity is not manifestly dangerous to each other, may frequently be effected with advantage. Among other benefits we may expect the return of natural affection; for egotism and vanity, though much exaggerated in the insane, do not generally prevent them from feeling, and that most sensibly, commiseration for the misfortunes of their fellows, and from rendering them services which often require great humility."

"As to convalescent patients, it will also be advantageous to place them, as well as those who, without being under hallucination, are under the influence of needless fear, in common sleeping rooms."

Chapter IV. is devoted to the consideration of the hygienic and moral management of nervous diseases. Our author here speaks of the manner of preparing beds for and of restraining violent patients. In these remarks there is nothing new. He next discusses the subject of classification, and proposes distinct apartments for those whose temporary delirium may depend on acute disease of the brain or the abuse of strong drink. He then proceeds to the consideration of various important particulars in the management of the insane; such as those of warming the buildings in which they lodge, of supplying them with comfortable clothing and proper diet; of the means of coercion, of religious services, of employment, as assisting in their discipline and cure, &c.

We will not stop to examine distinctly each of these subjects. Religious service is now very generally considered as a most valuable auxiliary in the moral treatment of the insane. In this country it was first introduced at the Bloomingdale Asylum, near New York, where it is still continued with the best effects.

But the most interesting part of this chapter is that which contains our author's observations on the employment of the insane.

"It has been remarked," says he, "in every country, that in those establishments in which the insane have been employed at bodily labour, the cures are more numerous than in those where patients only of a more elevated rank or of greater wealth are received, and in which no exercise of this kind is pursued. At Wakefield, at York, in the Quaker's Retreat, as well as in many other

establishments in England, labour is considered as one of the most valuable curative means. I have made myself, on a large scale, a happy experiment of its efficacy as a means both of discipline and cure."

"However much labour may be every where extolled, it is in fact seldom practised; and with the exception of Bicêtre, la Salpêtrière, and the asylum of Saint Yon at Rouen, where a young physician of talents and great zeal has introduced all the recent improvements, this method of cure is not to my knowledge extensively employed in the institutions for the insane in France. At Salpêtrière the patients are occupied either in some details of the service, or in knitting or sewing. Great numbers are indebted to this excellent custom not only for a well confirmed restoration to reason in place of an uncertain convalescence, but for the means of subsistence when they leave the institution; which saves them from the necessity of following too laborious an employment, and which, by providing against the dread of misery, shields them from the influence of the most common cause of relapse. Unfortunately, I repeat it, this practice is far from being general. In establishments for insane poor, both the necessary resources and suitable places for labour are generally wanting; in those for the insane belonging to opulent families, these means would abound, but the want of practice in manual labour, and, above all, the overweening pride usually accompanying this species of disease, have hitherto rendered useless all attempts of the kind. These, I think, should be perseveringly repeated in the treatment of a disease often incurable—a disease which reduces the rich and the poor to the same condition; and in introducing the proposed remedy we should employ all the resources of persuasion, and, if necessary, even of severity. A means of cure confessedly efficacious for the one class, should not, upon frivolous motives, be neglected for the other."

"At Bicêtre, during the last eight years, taking advantage of the various kinds of work there executed, and daring to assume the responsibility of placing in the hands of the insane the necessary instruments, we occupy daily, when the weather permits, more than a hundred and fifty lunatics at labour on the terraces, at horticulture, at mason work, at plastering, at blacksmith work, at joining, and even at timber work. No accident has yet happened to lessen the satisfaction experienced in seeing our patients labour, and it would take a most unexpected and severe one, to balance the advantages of employment. The health of the insane and their general condition has been improved by this measure; their recoveries have been more rapid and their relapses more rare. A maniac placed at the wheelbarrow a few days after admission, and just as he is beginning to recover from a violent attack of delirium, may, profiting by a temporary repose from labour, throw his cap into the air and give utterance to extravagancies; but, encouraged by the example of his fellow labourers, and by the exhortations of the attendants, he resumes his work, and at evening, on entering his chamber, falls into a most calm and refreshing sleep. A fact too remarkable to pass by silently, while speaking of the surprising effects of labour on the insane, is, that none of our patients have been in any way injured by the heat of the sun, although they have been exposed as ordinary labourers to its influence during the whole summer."

Profiting by the experience of the asylums at Wakefield and Hanwell, our author has caused to be prepared at Bicêtre a room where the patients may be employed at spinning and weaving. In common with every other person concerned in the management of the insane on a large scale, he urges the importance of occupation. The most striking fact derived from the recent reports of the best conducted asylums of those countries in the old world where these institutions are most philosophically and successfully managed, is the very large

and increasing number of patients usefully employed. Miss Martineau's beautiful account of the Hanwell institution would seem to be a creation of her own imagination; yet we can aver from personal observation that the proportion of useful labourers is almost incredible. The patients in this establishment are all paupers, and it is supposable that they have nearly all been accustomed to labour of some kind or other; hence the secret of the great number employed. By the last report of the Dundee Asylum in Scotland, it appears that during the past year the daily average number of patients in the house was 129, and that the number generally employed was 92. If by this it be meant that the daily average number employed was usually so high as 92, (and this we believe to be literally the fact,) this institution exceeds all others on record in the adaptation of employment to the habits and tastes of the patients, and in carrying out the great principle of occupation. No less than twenty-seven varieties of employment are enumerated, and among others "weaving linen for sheeting, cotton bagging, &c., breaking stone for the turnpike road, gardening, trenching and laying out ground, spinning, winding for weavers, shoe making and mending."

We have been particular to mention these facts, because several asylums for the insane poor are now being established in this country, and it is into these institutions especially that bodily labour may be successfully and extensively introduced. Shut up any number of persons in the full enjoyment of their mental faculties, without occupation, and it needs but little knowledge of human nature to predict how much unhappiness and mischief will be engendered. It is not surprising then that the insane, when deprived of liberty and doomed to perpetual idleness, should fritter away their existence in vain attempts to liberate themselves from restraint, or to carry into effect their favourite visionary schemes, or fall into a state of disgusting apathy, useless alike to themselves and to society. By employment, the recovery of the curable will be accelerated and confirmed, while the lives of the incurable will be rendered more happy and useful. The latter class forms by far the largest proportion of the inmates of our asylums, and if labour be not systematically introduced and thoroughly carried into effect in our pauper establishments, these will soon degenerate into mere lock-up houses. We believe we are not going too far when we say, that two thirds of the inmates of institutions of this description might be usefully employed.

The 5th and last chapter, containing some remarks on the ordinary modes of arresting the insane, or those supposed to be so, and projects of law for fixing the civil condition (*l'état légal*) of lunatics, we will not discuss, inasmuch as the subjects there treated are of local interest, and because we have already extended this analysis further than we had originally intended.

We cannot close the book before us without expressing our thanks to the author for the publication of so large an amount of useful information upon a subject on which so little is in general known.

When we look over our extensive country, and consider its

immense progress in civilization, wealth and luxury, the varied and increasing temptations to embark in the wildest schemes of speculation, the sudden accumulation and loss of fortune, the fluctuations of trade, the freedom of our institutions, the interest taken by almost every citizen in every political or financial movement that agitates the community, the intense activity of mind every where apparent, the fierce strifes of the predominating passions of ambition and avarice, involving so many minor ones and extending their influence throughout every class of society; we are compelled to believe, that we have among us as many active causes of insanity as any country in christendom.

If the few states which have made returns of their insane be taken as a standard for the whole, and if European statistics of insanity can be relied on, facts go to show that the proportion of lunatics to the whole population, is greater in America than in Europe. But we believe that European statistics of insanity *cannot* be relied on. The only country in which a regular and systematic plan of enumeration has been adopted is Norway, where the proportion of lunatics and idiots is one to every 551 inhabitants; a proportion considerably greater than exists in this country. In the other countries of that hemisphere the sources of information on this subject are partial and imperfect, being generally no others than hospitals and public and private institutions; so that the large number of lunatics living at home and in private families are not taken into account. It yet remains for us to learn whether insanity is more common in Europe or in America, whether national youth or national old age is most productive of mental disease. This is indeed a singular inquiry, and it is hoped that in the next general census, congress will take measures to ascertain the number of lunatics and idiots. It will also be important to learn how far diversity of climate, the various habits of the people in different sections of the country, and the institution of slavery, affect the mind.

We have no data upon which to form a correct opinion as to the prevalence of insanity among the aborigines. If it be possible to extend the census among these, some interesting results will doubtless be procured on various subjects.

Notwithstanding the want of general statistics of insanity in this country, sufficient is known to render it imperative on its citizens to rescue the wretched victim of mental disease from the dungeon and the chain. It is impossible to say how many thousands are now doomed to a night of mental darkness that will last until exhausted nature suffers a separation of mind and matter. All modern experience clearly shows, that insanity is a highly curable disease; more than this, it shows that where the insane cannot be cured, their physical comforts may be increased and secured in public institutions devoted to their interests, and that by teaching them to labour they may not only be made useful to themselves but to others.

As before mentioned, several states are now taking measures to erect asylums for the insane poor, and Massachusetts having already

led the way, has in full and successful operation an institution in all respects creditable to the intelligence and humanity of that enlightened commonwealth. We fear, however, that from the necessity of making immediate provision for the insane, our ignorance of the best models will prevent the formation or adoption of the most suitable plans. The treatment of mental disorders, where large numbers of persons are brought together, as in all public institutions, begins with classification. The first inquiry then, before any plan of building may be fixed upon, will be, into how many classes will the number and condition of our patients render it necessary to subdivide them? This involves several considerations, such as the separation of the sexes, of pay from pauper patients, and of the different grades of mental disease from each other. The first is so evidently proper and necessary, that in all architectural designs, provisions will be made for it as a matter of course. The second, for reasons already stated, is so important, that pay patients should be excluded from all state and other asylums intended for the treatment of paupers. Then there being but one class as to circumstances in life left, this can be subdivided into suitable classes, according to the mental conditions, the habits and propensities of the individuals who are to compose them, so that the whole internal arrangement and management may be comprehended at a glance. If on the contrary, persons from every rank in society, and paying every possible rate of board, be brought together under the same roof, confusion and perplexity will be the never ending consequence.

We will repeat it then, the first step to be taken in the construction of a lunatic asylum is to fix upon the number of classes it is destined to contain; if it is to be for six, or eight, or ten, then let there be as many subdivisions for each sex, entirely independent of each other, with distinct sleeping, sitting and eating rooms, with separate airing grounds, and without any necessary communication between any two classes.

J. M.

ART. XI. *The Nature and Treatment of Dropsy: considered especially in reference to the diseases of the internal organs of the body, which most commonly produce it. Parts I. and II. Anasarca and Ascites. To which is added, an appendix, containing a translation of the work of Dr. Geromini, on Dropsy; from the original Italian.* By EDWARD J. SEYMOUR, M. D., Physician to St. George's Hospital, &c. 8vo. pp. 218: London, 1837.

It is only by pathological researches of a very recent date, that any very clear light has been thrown upon the nature of dropsy. These have shewn it to be in every instance a mere effect, consequence, or symptom of some preceding disease, especially of a change of structure in one or more of the internal organs, by the removal of

which, when practicable, can its cure alone be effected. In a large number of instances it has been found to depend upon an impediment or obstruction to the return of the blood to the right side of the heart; the impaired function of that organ being relieved by the effusion of large quantities of serous fluid, in particular localities where the obstruction is partial, but extending, sooner or later, through the whole cellular texture of the body, when the obstruction arises from disease of the heart itself.

These facts, which have modified very essentially the treatment of the different forms of dropsical effusion, it is the object of the work before us to enforce and illustrate, so far at least as it regards anasarca and acites. Although the author has not attempted a full and complete investigation of the nature and treatment of these two forms of dropsy, presenting merely a brief outline of his own view and experience, his observations are, nevertheless, of great practical value.

The views, as well pathological as therapeutical, which he advances in relation to anasarca, are unquestionably correct; but we cannot yield our assent to the correctness of the position he assumes when treating of the pathology of ascites, that the effusion into the abdomen is, in the greater number of instances, produced by pressure upon the vena portæ, arising from induration of the liver, being persuaded, from our own experience, that it depends more frequently than Dr. S. seems willing to admit upon sub-acute inflammation of the peritoneum. His observations throughout, are, however, of so interesting a character, that we have concluded to present, in place of a mere review of the work, a very full digest of its contents, in which we have, we believe, comprised every thing of importance they afford.

In the introduction, sketches are presented of three presumed cases of dropsy, for the purpose of illustrating the circumstances under which the disease most frequently occurs in hospital and private practice. The accuracy of these sketches will be recognised by every observing physician.

The first chapter opens with the following short statement of the author's views as to the immediate cause of dropsical accumulations in general.

“The proximate or immediate cause of dropsy, appears to consist in the secretion of fluid by the capillary arteries, nearly resembling the serum of the blood, more or less diluted, and in some instances approaching very nearly in consistence to the liquid secretion of lymph, which takes place at the conclusion, and is one of the terminations of serous inflammation.”

The correctness of this statement being admitted, and it will not be denied by any one who has carefully investigated the subject, the next important inquiry is into the cause or causes by which the morbid secretion giving rise to dropsy is produced. So far as it regards anasarca, which is the first form of dropsy treated of in the work before us, the author, in accordance with the numerous well observed facts detailed by modern pathologists, refers the production of the morbid secretion into the cellular structure, to disease

1st, of the heart; 2ndly, of the heart and lungs; and 3dly, of the kidneys. There is also, he remarks, a certain condition of the vessels of the skin, occurring after cold suddenly applied to the surface of the body, or after these vessels have been long stimulated during eruptive diseases, in which the capillary arteries secrete a fluid precisely similar to that which is poured out as a relief to the congested vessels, in the organic diseases just referred to.

Œdema, which is the simplest form of dropsy of the cellular membrane, results either from tumours pressing upon the veins above the swelling, or from obstruction of the vein itself. The first occurs, for example, in one leg, in ovarian disease, accordingly as the tumour within the pelvis obstructs the return of blood through the iliac veins; the minuter arteries secreting fluid, which relieves the local congestion. If the tumour change its place, or the pressure be relieved by a horizontal position, the œdema disappears, or is greatly diminished. Œdema from inflammation and consequent obstruction of a vein, is seen in the legs after lying-in, in the arm after phlebitis from bleeding, and often in a single extremity in those diseases termed malignant, or of a cancerous kind, where, on examination after death, the vein will be found obliterated above the swelling, often from a deposition of matter not unlike what is found in the diseased mass, the cause of the patient's death.

"Wherever," remarks Dr. S. "great obstruction exists to the return of blood to the right side of the heart, it would be fair to conjecture from what we see in œdema in a single limb, that the whole venous circulation would be congested, and hence the whole capillary arterial system would secrete fluid, as a relief to the obstruction; and if this did not occur, the balance of the circulation would be in so disturbed a state as to cause rupture of vessels in some vital structure; and this we find to be the case: the capillary arteries pour out fluid into the cellular membrane, of greater or less quantity, according as the obstruction is considerable, and of greater or less consistence, as the patient's vital powers are greater or less, or the obstruction more or less sudden."

"Anasarca, then, is only a symptom of disease of an internal organ, with the exception hereafter to be more minutely described, in which the capillary vessels of the skin take on inflammatory action after cold rapidly applied."

Dr. Seymour proceeds next to show that in the majority of cases anasarca is dependent upon disease of the heart. The heart in these cases is enlarged, with either increase or diminution in the thickness of its parietes. In this form of anasarca, when the valves of the heart are unaffected, the pulse is increased in frequency, and occasionally in force, while the pulsations of the heart are felt over a large surface. Such is generally the case in young persons, when enlargement of the heart and adhesion of the pericardium have occurred subsequent to rheumatic inflammation. In anasarca, from enlargement of the heart, at a more advanced period of life, the valves are also frequently diseased: if the semilunar valves be principally affected, the pulse at the wrist is smaller, while the heart beats turbulently and over a large surface; if the mitral valves be diseased, there is more or less of a grating sensation communicated to the finger on applying it to the pulse at the wrist, and in either case the pulse intermits. The grating

sensation is also observed, when, with enlargement of the heart, there is a very considerable alteration of the lining membrane of the aorta above the semilunar valves, with dilatation of the artery; atheromatous deposit under the lining membrane, with portions of bone being likewise found on dissection. In both cases, but more especially the latter, the patient is subject to very severe paroxysms of pain, lasting for the space of some minutes, hours, or even days, but alternating with intervals of perfect ease.

The author states as a remarkable fact, that very extensive disease of an artery may take place without the occurrence of dropsy, while on the contrary, enlargement of the heart, unless death occur suddenly, previously to the obstruction of the return of blood to the right side being considerable, is usually attended with dropsy during some portion of its progress.

“The circumstance that the great arteries may be diseased to almost any extent, without dropsical effusion, while the heart, much enlarged, has its oppressed functions relieved by effusion, is of considerable advantage in diagnosis of diseases of this important viscus.”

Although the anasarca swelling which occasionally occurs in chlorotic females, is not strictly dependent upon organic disease of the heart, yet in such cases it will be found upon examination, the author remarks, that the languid condition of the heart's action, from want of power, gives rise to precisely the same condition, functionally, but in an inferior degree, to what arises from organic disease in the instances above referred to.

“The heart is unable to impel the blood to the extremities, and the capillary veins, neither receive nor transmit the blood with the same rapidity as in a state of health. Congestion of the venous system ensues, hence œdema of the ankles and legs, puffiness of the face, difficulty of breathing: symptoms which are removed by permanently increasing the heart's action by steel, and all the usual means of promoting the growth of the body—as exercise without fatigue, dry air, animal food, &c. The same condition arises after profuse bleedings, or hemorrhage. The obstruction of the circulation of the blood through the minuter branches of the pulmonary artery by disease, causes an inferior degree of congestion in the whole venous system. This is seen in cases of solidified lungs, either the result of inflammation, or obstruction from tubercles. The anasarca in this case is not so general as in diseases of the heart, for a portion of the blood still undergoes, from the extreme minuteness of the ramification of the artery, the usual change; the alteration also has been slow, and the declining strength of the individual, from the injury of this important viscus, has enabled, in some degree, parts to accommodate themselves to the change, *i. e.* the blood is in less quantity, and the obstruction less considerable and sudden, than after enlargement of the heart itself: hence, the dropsy is less severe, being confined to some degree of œdema of the lower extremities for the general dropsy, and effusion of fluid into the chest.”

Many cases of extensive disease of the lungs, unquestionably occur, however, without being attended with any degree of dropsical accumulation. In such instances, according to our author, and we believe his explanation to be perfectly correct, copious expectoration taking place affords the relief more safely to the congested circulation, than that which is effected by the effusion into the serous cavities, or the cellular membrane, in other instances. In cases of solidified

lung from tubercles, even where the secretion is not considerable, the diarrhœa or colliquative sweats, which so generally attend, relieve the obstruction.

The circumstances under which anasarca may occur, unconnected with disease of an internal organ, are 1st, when cold is suddenly applied to the surface of the body, and 2nd, subsequent to eruptive fevers.

“It is sufficient, Dr. S. observes, to remember the extreme vascularity of the cutis, the extensive secretion of perspiration over the whole extent—to judge that the impression of cold suddenly applied, checking this necessary secretion, would produce great mischief: the consequence would necessarily be, either inflammation of the vessels themselves, causing a secretion of lymph; or this process would be counteracted by an increased degree of secretion or exhalation in other parts of the body. And what in fact do we find to be the case? Most frequently, when cold is applied suddenly to the surface of the body, diarrhœa is the consequence; increased secretion and exhalation is formed in the intestinal canal, and thus the repressed sensible or insensible perspiration is balanced, and no dropsy takes place.” “Ordinary fluids failing to be secreted, which it is the function of these vessels (the cutaneous) to prepare, and no increased secretion taking place from the membrane, (the mucous) the relation of whose properties with the membrane covering the body is so considerable, the vessels secrete lymph, the whole cellular membrane becomes distended, and the swelling is less elastic, more resisting, the skin more stretched and shining, than in the cases where a slow relief is afforded to the obstructed venous circulation. The action of the heart and arteries is increased in force and frequency; the secretion of urine is diminished, and high coloured; the tongue is white; in fact, a feverish condition of the body is formed; blood drawn from the arm shews the buffy coat; there is intolerable thirst present; and the remedies both indicated and effectual, are those which diminish the increased action of the heart and arteries, and control the secretion of coagulable lymph, viz. blood-letting and mercury.”

Anasarca occurring after eruptive fevers is treated of in a subsequent chapter.

Chapter II. is devoted to the consideration of anasarca from rheumatic disease of the heart.

“The subjects of this disease are young, and with few exceptions under forty years of age. It has occurred to the author to see this disease in patients of nine years of age: and the most severe case he ever saw, that in which the disorganization of the heart had proceeded to the greatest extent, terminated fatally at the age of thirteen.”

In this form of anasarca there is an expression of anxiety, even greater than in that from other diseases of the heart,—

“the pulse is generally small and quick, sometimes intermitting, but very small compared with the action going on within the thorax, a tumultuous beating of the whole organ: this smallness of the pulse compared with the violence of the action in the heart itself, arises from the inordinate growth of the organ, without a corresponding enlargement of the vessels of the heart.” “If the anasarca be very considerable, there is little pain felt in the chest, the obstructed circulation being relieved by the pouring out of the secretion from the minuter vessels. If the effusion be only commencing, there is almost always pain in the region of the heart, often pain in the course of the biceps muscle of the left arm, and cramps in the legs: the patient is unable to lie

down, and the most easy position is bending forward over the back of a chair. There is also in the early stage a disposition to syncope. If the effusion has taken place for some weeks, the pain and disturbance in the chest are less felt, and the patient attributes all his sufferings to the dropsy. The legs are tense, the face swelled, and of a pale bluish tint, great difficulty of breathing, the urine scanty and high coloured, and where unaccompanied by disease of the kidney, does not coagulate by the usual method,—the pulse quick and weak, the surface of the body cold; there is present a short dry cough without expectoration, occasionally tinged with blood.”

In such cases it will be found upon inquiry that the patient has suffered from an attack of acute rheumatism of the limbs, within a year or perhaps two years preceding the occurrence of the dropsy. Occasionally he has experienced repeated attacks, or one very severe attack has preceded the symptoms by a few months.

The pathological appearances are uniformly, enlargement of the heart—its parietes thickened, especially of the left side, with the cavities also larger than natural, but not in proportion to the increase in the thickness of their walls; the pericardium glued together by layers of lymph, often of old formation and even organized, rarely when life is terminated by dropsy, very recent.

In anasarca following rheumatism, according to the observation of Dr. S. the other viscera are generally unaffected—the alteration in the structure of the heart being the sole cause of the disease.

The prognosis of these cases is always unfavourable,—but it is to be remarked, that the disease is often more chronic, even in its most severe forms, than dropsy from disease of the heart produced by other causes; and this arises, according to Dr. S., 1st, from the disease being most frequently occurring in young persons; hence, if the severity can be relieved in the first instance, the growth of the chest enables the impaired action to be better borne. Thus, he has seen the disease, in a most severe form, endure for five years. 2ndly, from it not being the result of excess, spirit drinking, &c. other organs have not suffered, as so frequently occurs in anasarca after such indulgences.

The treatment of anasarca from rheumatic diseases of the heart varies according to the degree of inflammation of the pericardium going on at the time of the effusion. When the effusion has been immediately preceded by pain in the heart, and some swelling, rest, leeches or pain in the limbs, inflammatory action undoubtedly exists, and the means to relieve it must be resorted to. A moderate abstraction of blood, performed while the patient is in a horizontal position, so as to relieve the heart without producing fainting, which when it occurs is liable to terminate in death, is the first remedy. To this should succeed the employment of calomel and opium. Three grains of the first, combined with a quarter of a grain of the latter, may be given every four hours; a blister may also be applied over the region of the heart, and a strictly low diet enjoined.

Dr. S. has found that in this form of anasarca very considerable quantities of calomel may be administered, without affecting the gums or producing any inconvenience whatever. He has repeatedly seen

from fifteen to twenty grains, in the acute stage, given during ten or fourteen days, with no other effect than to improve the breathing, diminish the swelling, procure tranquil sleep, and restore the pulse to its regularity.

Under the same circumstances in which blood-letting and calomel are indicated, the author has found the most useful diuretic in the present form of anasarca, to be nitre—he directs from ten to fifteen grains to be given in mint water twice daily. The quantity of urine, he remarks, secreted under this course, is sometimes very great, and with the most evident relief to the patient. From the preparations of colchicum, Dr. S. has found no beneficial, but rather injurious effects to result.

When the inflammatory symptoms of the case have ceased, and the patient has for months laboured under extensive effusion into the whole cellular structure, with scanty and high coloured urine, great dyspnoea, full, but easily compressible pulse; the swelling of the limbs being lax, white and receiving deep indentations from slight pressure, the object is to discharge the accumulated fluids by diuresis, and thus to relieve urgent symptoms—to this end Dr. S. recommends the preparations of digitalis, as productive of the happiest results. It is the infusion of digitalis which he has found under such circumstances to be the most uniformly successful. He recommends it to be given in the following formula: *R infusi digitalis ℥iv. liquor. oxymur. hydrarg. ℥ij. aq. menth. sativ. ℥viij. tinc. cantharidis mxxx. m.* To be given twice or thrice in the course of the day. The tincture of cantharides, although an active diuretic, rendering, according to our author, every other more effectual, is, however, contraindicated in aged persons, where disease of the urinary organs is present.

The activity of the above diuretic draught, Dr. S. remarks, is sometimes astonishing; he has known as much as a gallon and a half of urine voided in one night, after the second day of its employment. It will occasionally, however, purge, an effect to be prevented by giving a pill composed of one grain of opium every night at bed time.

“It is obvious that the enlargement of the heart continues, when the dropsy which relieved the obstructed circulation is carried off by remedies, and that the patient has a crippled existence,—but in the more opulent classes of society, his life may be spared many years: not so with the poor man, he must return to the rapid changes of temperature—the originally exciting cause of the disease—and to all those circumstances which especially influence the diseased organ, viz. toil, anxiety, vexation, and want. Hence the numerous and unhappy relapses which are seen in hospital practice.”

Anasarca may occur from enlargement of the heart produced by the intemperate use of ardent spirits or malt liquors, or by long continued anxiety and great mental distress. “In the first instance, the heart is much enlarged, principally with increased thickness of the parietes of the left ventricle, and the septum between the ventricles, it occurs from twenty to sixty years of age.”

The distension of the cellular membrane is in these cases enormous—in some instances causing the cutis to split into laminae, giving

the appearance of fine threads, dividing its texture transversely; in others, effusion occurs in large blisters on the extremities, which by bursting and discharging serum, for a time alleviates the distress.

“The pulse is generally strong and quick, the urine scanty and high coloured, and does not coagulate by heat, or the admixture of acid,—the tongue is furred, the patient obliged to be raised in bed, and complaining of an insupportable oppression. The face is swollen, and often with a bluish tint, and there is constant thirst; the bowels are generally natural in their functions, and the appetite little deranged.”

In such cases the most obvious means of relief would appear to be by scarifications or incisions through the skin, which are in fact for the time very effectual. Dr. S. has seen the dropsical swelling entirely reduced by this means in a few days; but in almost every *hospital* case, erysipelas first, and subsequently gangrene, supervened, and the patient died. Acupuncturation in dependant parts produces an inferior degree of relief,—but, according to our author, with less danger, at least in hospital practice. He has, however, known this operation to be followed by erysipelas and gangrene, although far less frequently than incisions through the skin.

The most important of the internal remedies in the form of dropsy under consideration, agreeably to the experience of the author, is elaterium. It may be employed where the strength is yet unbroken, however great may be the oppression from the extent of the effusion, and the relief has often been so great and so permanent as to induce the belief, that not only has the effused fluid been expelled, but that the increased bulk of the parietes of the heart has been diminished. To the elaterium, blood-letting should be premised, as well to unload the congested venous system as to promote absorption. The elaterium may be given in the following formula: *R elaterii gr. ½, subm. hydr. pulv. capsici, āā gr. ij. conf. ros. canin. q. s. ut ft. pil.* To be taken in the morning. This will very frequently produce many liquid stools, accompanied for the most part by severe bilious vomiting, by which absorption is increased. Oppression in this disease should not be confounded with actual debility.

When the elaterium fails, or ceases to produce the desired effect, Dr. S. has succeeded in evacuating the fluid by large doses of cream of tartar. He directs an ounce in solution to be taken every morning; or if this act too violently by stool, half an ounce. Its beneficial effects generally commence after the fourth day.

Anasarca from enlargement of the heart, with attenuated parietes, (chap. 3) occurs in constitutions broken down by habitual intemperance, or debilitated by affliction, long continued anxiety, great watching, and sometimes after long continued and profuse evacuations—more frequently in females than in males, and it is more commonly met with in advanced age than the other forms of anasarca from disease of the heart.

The pulse is weak, often irregular; even where there is volume it is very compressible. The face is swelled and of a white appearance, while the integuments pit on the slightest pressure. The effusion is

always preceded by difficulty of breathing, especially on any quick motion; by violent palpitation, and disposition to syncope. The difficulty of breathing is not, as in the former instance, at first much relieved by the effusion, for not unfrequently the cellular membrane connecting the lobules of the lungs is infiltrated also. It is in this form of dropsy that sudden death frequently occurs, even when apparently the disease is diminishing. It is also frequently complicated with dilatation of the arch of the aorta, and deposition of atheromatous matter with spicula of bone under the lining membrane. In such cases, besides the evils arising from the oppression and distension present, there are also paroxysms of severe pain similar to what occurs in angina pectoris.

It is in this form of the disease, where the tone of the system is much impaired, according to our author, that the preparations of digitalis as diuretics are most effectual. The digitalis may be combined with mercury, (pil. hyd. gr. iij.; scillæ exsicc., pulv. fol. digitalis āā gr. j.) or given in infusion with the liq. oxymur. hyd. in mint water; and if the patient labour under no disease of the bladder or urethra, with the tincture of cantharides, by which latter its diuretic powers will be greatly increased.

“The nitrate of potass in solution, in the dose of fifteen grains; the acet. potass. in the dose of from one to two drachms, either in its usual form, or made by neutralizing in solution the carbonate of potass with the vinegar of squills* may be given in a draught, with a pill consisting of three grains of the blue pill, several times in the day; or a kind of punch may be given, made with cream of tartar instead of lemons, to every pint of which two ounces of gin may be added: all these are very effectual diuretic drinks. The latter is very convenient in hospital practice.

“The spirit of nitric ether may be added, in the dose of a drachm to a draught containing ten grains of nitre dissolved in mint water; or it may be given as a beverage in the proportion of two drachms, or two drachms and a half of ether in six ounces of water: in this latter form it is not disagreeable.”

From the observation of several years Dr. S. considers that, in the form of dropsy under consideration, the most effectual diuretics stand in the following order of utility:—Infusion of digitalis with tinct. cantharid.; nitrate of potass; supertart. potassæ with sp. juniper comp.; pill hydrarg., pulv. dig., et scillæ exsicc. in form of pill; acet. et tinct. scillæ; infus. pyrolæ umbellatæ, an ounce of the leaves and stalks to a pint of water, which should be drunk during the day. The latter is, however, improper in cases of advanced age, or where the patient has suffered from stricture. Decoc. spartii, an ounce of the broom tops to a pint and a half of water boiled to a pint, and mixed with an equal quantity of hot milk, or in infusion as common tea, it is most useful in the convalescent stage—sp. ætheris nitrici; sp. armoraciæ comp.

If the dropsy be of recent date, the above means, we are told, will often suffice to carry off the water by diuresis, while careful attention to diet, which should be nutritious but not stimulating, carriage exer-

* The following was a favourite prescription of the late Sir F. Milman:—℞. aq. menth. virid. ℥j. aq. puræ ℥ss.; carb. potass gr. xv.; aceti distill. 3vj. aq. pip. Jamaic.; syrup. aceti scillæ, āā ℥j., mix for a dose.

cise, pure air, and the avoidance as much as possible of harassing and anxious occupations, will sometimes prolong for years the patient's life. But where the dropsy has been of several months continuance, little is to be expected except relief. Even here, however, life may be prolonged for a considerable time, under the most unfavourable circumstances, in the opulent.

It sometimes happens, while the dropsy has for a long time resisted the remedies employed, that after the administration of some trifling remedy, the swelling begins to subside with great rapidity, and the patient feels delighted at this apparently favourable circumstance. This rapid subsidence of the anasarca, Dr. S. considers, when not preceded by a gradually increased flow of urine or other evacuations, as a very fatal symptom. "The vital powers are no longer sufficiently strong to afford relief to the obstructed circulation; secretion from the smaller and more minute vessels no longer relieves the labouring heart." In several cases which have fallen under the author's notice, the patient has never rallied, after such sudden subsidence of the effusion, beyond a month, though he has heard of life being prolonged somewhat longer.

Anasarca, from the sudden impression of cold, (chap. 4,) according to Dr. S., is not of very frequent occurrence. When it does take place, the intumescence of the surface is hard and tense, the pulse hard, the urine very scanty and incoagulable by heat or acids, the heart presents no indications of organic disease, though its action is increased; the bowels are costive. There is a general febrile excitement; the vessels of the skin over the whole surface of the body secrete serum, and the mucous membrane is deprived of the natural secretions furnished by its vessels in a state of health.

The indications of cure are to diminish increased action and to restore the secretions, especially those of the intestinal mucous membrane.

The patient should be immediately bled, and the bleeding is to be followed by a pill, night and morning, composed of three grains of calomel and one of opium, with a saline draught three or four times in the day; every second morning the bowels should be freely opened with senna and crystals of tartar. The cure will generally be perfect in about ten days; but the patient should be confined to the house for a few days longer.

The pathology of anasarca succeeding to scarlet fever is, Dr. S. remarks, not well understood; he is convinced, however, that it is seldom fatal, and is of far less frequent occurrence than formerly. The French and Italian physicians attribute the production of the dropsy in such cases to the impression of cold upon the surface.

"The cold practice in this disease," observes our author, "universally pursued in Britain, and which is rarely followed by anasarca, is the best answer to such an explanation. The same may be said of the opinions which attribute this form of disease exclusively to weakness."

Dr. S. remarks that nearly all eruptive diseases, when mild and little interfered with by remedies, are followed by diarrhœa; this

being the means by which nature terminates the cure; and hence when saline purgatives are freely used throughout the disease, anasarca seldom supervenes. It is mentioned as a remarkable fact that the occurrence of dropsy after scarlatina is by no means in proportion to the severity of the attack. A very slight febrile attack is sometimes followed by it; and the author does not recollect among the "very worst cases of a low type to have ever seen one terminate in serous effusion."

"Anasarca, after scarlatina, begins generally from the fourteenth to the eighteenth day after the commencement of the disease—sometimes gradually, sometimes within the space of a very few hours."—"In many instances the urine is mixed with blood, and in such cases coagulates."

In regard to the treatment, the author directs, "If the preceding fever has been slight, and the forces of the patient little broken, and especially if it has been thought unnecessary to purge in the disease, and no diarrhœa has supervened," that blood-letting should not be omitted, and that the patient be freely purged with calomel, followed by senna with crystals of tartar, or a tea-spoonful of an electuary composed of two drachms of jalap, half an ounce of cream of tartar, and half an ounce of honey, to be repeated every alternate day, a beverage of half an ounce of *sp. ætheris nitrici* in half a pint or a pint of water, with a small proportion of syrup, being administered during the day.

If the patient be weakly, or his forces are much broken by previous delicate health, and a severe attack of illness, the author directs that recourse be had to diuretics—either the combination of *digitalis* with a bitter, or some of the bitter diuretic infusions. He has seen the best effects result from a combination *infus. digital.* and *infus. gentianæ*, of each three ounces, with one drachm *liquor potassæ*; and in a few cases striking benefit has resulted from the infusion of *pyrola umbellata*, to every pint of which half a drachm of *tinct. lyttæ* has been added, in the dose of two ounces every four hours. Dr. S. has never known benefit to result from the use of tonics alone. He conceives that, in many cases, the vapour bath will be a valuable adjunct in promoting the cure, by inducing a more healthy action of the skin; the use of the lancet should, however, always be premised.

"In chlorotic anasarca and in anasarca occurring after great loss of blood, a functional condition of the heart occurs not very dissimilar to what happens when the viscus is itself diseased in its structure."

"In chlorosis there is a deficiency of red blood,—the heart makes up in frequency, in very severe cases, what it wants in force, (the same occurs after great loss of blood—hence what is called the hemorrhagic pulse,) and the blood again shews a disposition to stagnate in the right side of the heart; the ankles and legs swell, the face is puffy and white; in slight cases the pulse is languid, in severe ones, rapid and very weak; there is terrible palpitation on ascending a stair; the pulsation is communicated to the jugular veins, and there is much headache: but the treatment is widely different from that necessary in a case of organic disease; the patient's strength in this instance must be built up, the injured organ is not to be relieved from its oppression by evacuants, but stimulated gradually to circulate the blood more regularly, while nutrition affords this fluid of its natural and stimulating quality."

The preparations of steel, where they can be administered without exciting fever, are the best remedies in these cases.

“The ammoniated tincture, given in the dose of half a drachm to one drachm several times in the day, will be generally borne; when, however, it produces much headache, the cure should be commenced by ammonia, æther, or the foetid gums; after a short time steel will be borne, and in another week, the most effectual, in the author’s experience, of all the preparations of steel, the *mist. ferri comp.* will be taken in the dose of an ounce, gradually increased to two ounces, twice in the day, with the most decided benefit. To this must be added, if possible, horseback exercise, and pure dry air; first the lightest, and then the most nutritious animal food should be administered.”

By these means an effectual cure may be accomplished.

Chapter V. Anasarca from disease of the kidneys.

“That the kidneys are frequently diseased, as a cause of dropsy, is a modern discovery, which we owe to the patient investigation and sagacity of Dr. Richard Bright; and subsequent authorities have confirmed the fact, that the disease of these organs is always accompanied by a greater or less degree of coagulability of the urine, according as a greater or less degree of alteration of the structure of the kidneys exists—from perfect granulation, as pointed out by Dr. Bright, to simple engorgement.

“The specific gravity of the urine is also always less than in healthy urine, and there is often found a deficiency of urea in it.”

“The urine in this disease is sometimes scanty and high coloured; but in the worst cases the urine has been found to be pale and abundant, while the anasarca was general and to a great extent. In such cases the disease is very fatal; and the condition of the kidney, its extensive disorganization and obstruction visible after death, explains the reason why anasarca without any diminution of the secretion of the urine, was always looked upon as a condition of disease unusually hopeless.”

The coagulability of the urine after scarlatina, with admixture of blood, was noticed by Drs. Wells and Blackall. It may occur in dropsies from cold, in which an inflammatory state of the system exists, and is then relieved by the ordinary antiphlogistic remedies.

Dr. Bright would appear, in cases in which disease of the liver, heart and kidneys co-exist, to consider the disease of the kidneys to be the primary affection, and that of the two other organs merely secondary. Dr. S. however, believes that the disease of all the above organs are to be referred to the same cause, the abuse of ardent spirits, or long continued and repeated exposure to cold.

“When a patient presents himself for examination with anasarca of the legs, thighs, and parietes of the abdomen, of some weeks duration, where no disturbance in the motion or regularity of the heart’s action is to be perceived, and on testing the urine by heat, or the addition of a mineral acid, it coagulates strongly, we may safely conclude that disease of the kidneys is the organic cause of the dropsy; if the urine be scanty and high coloured, it is a relievable case; if abundant and pale coloured, one of deep anxiety. The skin is singularly pale and dry in this disease: and Dr. Bright has very fully exemplified the fact, that persons labouring under it are subject to sudden inflammatory attacks of various viscera, and even of effusion into the ventricles of the brain. The principal indications of cure, then, are to get rid of the dropsy by such remedies as will alter the morbid condition of the urine; and secondly, to remove any inflammatory attack which may arise in the course of the treatment.

Dr. Bright, and subsequently Dr. Osborne, have laid great stress on the sympathy which exists between the skin and kidneys, and recommend every attention to restore the healthy secretion of this organ."

Dr. Wells cured three cases out of five, of anasarca with coagulable urine, with cantharides.—Dr. Bright states that he has succeeded with the cream of tartar in several instances, and Dr. S. states that he has found the latter far more useful than any other article in the form of dropsy under consideration. He has employed at the same time the vapour bath, on alternate days. The perspiration excited by the bath is excessive, and its use should be graduated to the patient's strength. When there is pain in the lumbar region, as not unfrequently occurs in an aggravated form of the disease, cupping is very useful, and every intercurrent inflammatory disease Dr. S. has been in the habit of treating exactly as if no dropsy had existed, according to its symptoms and locality—blisters only being excepted, from their being often followed by erysipelas, and even sloughing.

The second part of the treatise is devoted to the consideration of ascites or dropsy of the abdomen.

Dr. S. is of opinion that when the kidneys alone are diseased, ascites does not generally occur; but that any apparently increased bulk of the abdomen arises from anasarca of the cellular membrane of the integuments.

Ascites is occasionally produced when the heart alone is diseased, but from the small extent of the effusion within the peritoneal sac which then takes place, it is subordinate in importance to that into the cellular membrane of the surface of the body. In consequence of the peculiarity of the abdominal circulation, the obstruction to the heart's action from disease of that organ will effect the venous system of the abdomen far less than it does the venous circulation in the other parts of the body.

Dr. S. sets down disease of the liver as the principal cause of abdominal dropsy. He considers, however, that mechanical pressure upon the vena portæ from enlargement of the liver to be very rarely the cause of effusion into the peritoneal cavity, "and then only when the viscus is not simply enlarged, but indurated." The liver, in consequence of "depositions of matter of a malignant nature, known under the name of encephaloid tubercles," is often so much enlarged as to occupy the whole abdomen, without any effusion being present.

"The disease of the liver most frequently connected with ascites, is according to Dr. S., one characterized by diminution of the bulk of the viscus. The liver is about one half its natural size, very hard, and with the sharp edge blunt and rounded. After death, instead of finding it protruding into the belly, we seek for it under the ribs in the right hypochondrium, and find it there drawn up, as it would seem, from its diminished size. The peritoneal coat is, in such cases, most frequently found thickened: this not unusually takes place in parts, and this partial thickening gives to the viscus the appearance of being puckered, not very unlike the lobulated structure of the calf's kidney"—"Occasionally, the whole peritoneal coat is thickened, of a milky white colour, and the viscus beneath contracted, extremely hard to the knife, and presenting a round almost globular mass, when removed from the body.

"The consequence of this change is, the *uniform pressure upon and obstruction*

of the minute and secreting branches of the *vena portæ*: such an obstruction naturally throws back the blood upon the trunk of the vein; the capillary veins are congested, and the capillary arteries secrete fluid—not a transudation from their coats, as was conceived, but a secretion resembling the serum of the blood.

“This thickening of the peritoneal coat has made some authors suppose that inflammation of this covering alone is sufficient to produce the disease, and that it is never found where such marks of inflammatory action are absent, hence that dropsy is necessarily the result of inflammation.”

The above supposition the author considers to be unfounded, because, as he asserts, peritoneal inflammation may exist to a great extent without dropsical effusion, and because there is another diseased condition of the liver in which, although the peritoneal coat is not implicated, dropsy is the consequence, from *uniform obstruction* being presented to the extreme branches of the *vena portæ*.”

“In this instance, the secreting structure of the liver is nearly obstructed by the deposition of a reddish white substance, by some supposed to be lymph, and the effect of inflammation, by others supposed to be cholesterine.—On a section of the liver, the whole seems to be made up of rounded masses, which, in some instances, can be separated from the cellular membrane which connects them, but the change is uniform throughout the whole mass. In many such cases the peritoneal coat is quite clear and transparent, proving that causes exist, independent of its thickening, to produce such an obstruction to the progress of the blood, as to act as the proximate cause of dropsy.”

In answer to the objection that obstruction alone cannot be the cause of the effusion, because cases occur in which the structure of the liver is wholly obliterated, the secreting parenchyma being changed into a fatty mass, or of a very pale yellow colour, or almost entirely composed of encephaloid tubercles, and yet without dropsy being produced, Dr. S. presumes that, in such instances, there is an alteration in the circulating fluid itself; the arteries do not secrete fluid, in order to keep up the balance of the circulation, impeded by the disease of the viscus, but both solids and fluids undergo a degree of degeneration, and the whole system tends to decay: The countenances of patients thus diseased is of a waxy, yellow colour; no red blood appears circulating on the surface; the principal ailment complained of is excessive weakness and sinking, often without any local pain; the pulse is weak and about a hundred in a minute; the patient is emaciated, and the muscles have lost their firmness and colour,—in blood drawn from the arm, the red particles are scanty, and the fibrin scarcely adheres; there is a weakened state of the nutritive fluid, adapted to the weakened state of parts which act in the function of secretion, both of which tend to produce with certainty the death of the patient.

Of the two diseased states of the liver described above as causes of ascites, the first is the most frequent, we are informed, and is undoubtedly produced by intemperance, especially in the use of ardent spirits. The second, Dr. S. is inclined to believe often arises from indulgence in the use of opium.

“When some induration of the liver accompanies disease of the heart, both ascites and anasarca are present, but the abdominal effusion is small in quantity, compared with what takes place in the cases now to be considered. In the former, the increase of bulk is principally owing to infiltration of the cellu-

lar membrane connecting the muscles of the abdomen; in the latter, these muscles are wasted, the fat absorbed, the distended abdomen is tense in every part, the swollen veins give to the whole a bluish appearance, while the hands and arms are wasted, the features drawn in and haggard,—the legs are also often wasted, and indeed always so, early in the disease, but at length the pressure of the immense body of fluid in the pelvis prevents the return of blood in the iliac veins, and the lower extremities become anasarcous. The pulse is quick and feeble,—the tongue red, and rough, with prominent papillæ, and sometimes aphthous; the urine is very scanty, and deposits a pink sediment, like the finest rouge; the thirst is insupportable; and the alvine excretions scanty and ill coloured, the bowels being sometimes difficult to move, at others affected with diarrhœa.”

To effect a cure in such cases is impossible—when the effusion is recent, the author states, that advantage is occasionally derived from mercurial friction upon the abdomen; three grains of calomel with six of rhubarb, being given internally every alternate night, followed by infusion of senna with crystals of tartar, in the morning.

In regard to the dandelion, the operation of which has been so much praised in the cases before us, Dr. S. states that although he has seen the article freely administered in extract, decoction and infusion, he has never been able to trace any obvious effect from its use beyond slight diuresis, or occasionally, when in large quantities, relaxation of the bowels. In the form of the disease under consideration the debility of the patient precludes the use of elaterium. His chief comfort, according to Dr. S., is derived from the use of diuretic drinks, especially nitre in solution, which relieves the craving thirst more than any other remedy. For the action of other diuretic remedies he refers to what has been said under the head of anasarca. When the disease is very far advanced, Dr. S. has, in one or two instances, seen two grains sulphate of quinia dissolved in two ounces of water, with a few drops of diluted sulphuric acid and a drachm of the tinct. cardamomi, given on the days in which the calomel and rhubarb are omitted, to work apparently wonders for a few weeks, and to impart not only hope to the patient, but absolute relief by sustaining his strength. The preparations of iron may occasionally be used with success. The muriated tincture acts also, in such cases, sometimes as a powerful diuretic; ten drops may be given thrice daily in infus. quassiæ.

Tapping as a means of relieving the distension of the abdomen will naturally suggest itself to the mind of every practitioner. Dr. S. although he prefers an early resort to this operation is not inclined to advise its adoption until purges, with neutral salts, and mercurial frictions, have been tried. He very properly remarks, “it is not unaccompanied with danger from peritoneal inflammation; and, as it is well known, the necessity for having recourse to it speedily recurs.”

“When the liver has been contracted during a long period, has a puckered peritoneal coat, or that membrane is thickened like semi-transparent horn, its sharp edge having entirely disappeared, or where the secreting vessels are uniformly obstructed, the fluid drawn off (by tapping) is quite limpid, and enormous in quantity.

“If clear serum, deeply tinged with blood, follow the introduction of the

trochar, we may be certain that a malignant growth of considerable size, often attached to the liver or ovarium, is the cause of the peritoneal dropsy."

When the fluid drawn off is of the colour and consistence of whey, with shreds of lymph floating in it, it is, according to the author, undoubtedly the product of inflammatory action, modified by the strumous habit of the patients in which it principally occurs. In other cases of ascites, he remarks, "inflammation may have been, and probably has been, the cause of the thickening and hardening and contraction of the liver, but the effusion is a consequence of this alteration of structure already produced:" and in cases of serum effused from the pressure of malignant tumours, these latter are, he believes, traced by no one to true inflammatory action at their commencement, or during any part of their growth.

The sudden disappearance of ascites from disease of the liver is generally an occurrence of very dangerous import. This is preceded, remarks our author, often by frequent and almost uncontrollable vomiting; or, if the water has been drawn off by tapping, and does not again collect, violent pains in the bowels occur, with a diarrhœa, which is not to be restrained by any of the usual remedies. After death, Dr. S. has found the intestines to be of a deep leaden blue colour, throughout their whole extent, and the omentum of the same colour—the peritoneal coat of the intestines being thickened and opaque. Sometimes shreds of lymph, of no very recent formation, adhere to the convolutions, but in general the whole peritoneal covering of the intestines is only thickened equally throughout, and of this blue colour. Dr. S. has known the pain and diarrhœa immediately to succeed the disappearance of the fluid and last during several weeks, its severity being little mitigated by remedies.

While Dr. S. points out especially the dependence of ascites upon contracted and hardened liver, he desires not to be understood as overlooking the effusion of fluid into the abdominal cavity which succeeds to enlarged and *hardened* liver and spleen. This is frequent after repeated attacks of ague.

Fortunately, he remarks, except under very aggravated circumstances, the effusion and its cause are capable of being removed, and the patient permanently cured, unless constantly exposed to the influence of miasmata. The remedies, he recommends, are mercurial friction, saline purgatives, douches of cold water and the hydriodate of potass.

"Two or three grains of this latter, taken, dissolved in two or three ounces of water, twice daily, will sometimes succeed when other remedies fail: under its use the patient's strength and appetite will return, while the dropsical effusion sometimes subsides gradually, with an increased and limpid flow of urine; of course if the enlarged viscera be painful to the touch, it will be advisable to apply leeches repeatedly, before having recourse either to mercurial frictions or the use of the hydriodate of potass. Where saline mineral water cannot be obtained, the best medicines are the tartrate or supertartrate of potass, or the Rochelle salt, in the dose of from half an ounce to six drachms, every morning, dissolved in half a pint of water."

In the sixth and last chapter the author treats of ascites from tuber-

culated accretion of the peritoneum, of which latter he presents the following description.

“The disease, where it proves fatal early, consists of a pearly thickening of the peritonéum, the membrane being pushed up by numerous eminences, or tubercles, deposited on the cellular side of the serous membrane: in mere chronic cases, large masses of thick cheesy looking matter are deposited on the cellular side of the omentum, sometimes distending it, like a bag, into an unequal globular tumour, at others into a flat mass, compressing the intestines like a pad.” The disease is often accompanied with vomiting of a peculiar character; being of a deep leek green colour, sometimes varying to purple; where this vomiting occurs, the disease of the peritoneum is, according to Dr. S., invariably present; it has, however, been absent in all the instances which have fallen under his notice accompanied with ascites.

“The dropsy which accompanies this disease is always more scanty than that which is the consequence of disease of the liver, sometimes only a few pints, and seldom more than two gallons are poured out.”

“It is more common in young people than in old, and in females than in males. The dropsical effusion is often mixed with shreds of lymph, and is more or less whey-coloured, from the presence, doubtless, of low inflammatory action, and it more frequently accompanies the universal thickening of the peritoneal covering of the bowels, than where accretion of the omentum forms the mass of disease: after death the small intestines are glued together, and more than once Dr. S. has seen the whole taken out together, after death, in one globular mass, by passing a ligature round the root of the mesentery.

“The pulse in such cases is weak and quick, the features pinched and sharp, and the tongue red and glazed, as if a hot iron had touched it; sometimes of still deeper red colour, with patches of apthæ. There is always a sense of weight and distension of the abdomen, even where no ascites is present.”

In the treatment of this affection, Dr. S. conceives that the internal use of mercury is rarely of benefit, nor is any really good effect, he states, derived from powerful purgatives, these being apt to produce vomiting, which is much to be dreaded. He has observed where effusion takes place, that it is often early in the disease; whereas, when the disease is fully established, and the prolongation of the serous membranes are formed into hard masses, it is more frequently absent, while the peculiar and fatal vomiting relieves the obstructed circulation.

Tapping has invariably, observes our author, been followed by bad results, increasing the low inflammatory action, and tending thus, perhaps, to exasperate the disease.

If pressure upon the abdomen causes severe pain, Dr. S. directs a bleeding from the arm, or if the patient be weakly, a dozen leeches to the abdomen: further than this, the antiphlogistic practice appears to him to be hurtful, and in many cases, he adds, the practitioner is not consulted until the results of slow inflammation have been established, thus rendering depletion improper, by its weakening the forces of the patient without controlling the action which first produced the disease.

“Frictions with the liniment. hydrarg., morning and evening, are often attended with benefit, but it is on the use of the hydriodate of potass Dr. S. has been accustomed to rely, from finding the general health recover under its influence, and the effusion, hardness and tightness of the abdomen disappear in a remarkable manner. Two grains of this salt, given in a draught of equal parts of cinnamon and common water, with a little syrup, may be administered for several

weeks twice in the day.” “During its employment a few leeches may occasionally be applied with advantage where there is any pain upon pressure; if restlessness and sleeplessness be present, five grains of the extr. conii may be given with each draught, in the form of pill. The bowels are generally costive, and Dr. S. has found the best medicine to relieve this to be half an ounce to six drachms of phosphat. sodæ daily in a pint of beef tea.

Very solid tumours of the ovary, or enlargement of that organ, with much of the structure in the cysts solid, will often, from pushing upwards the intestines, compress veins of the vena portæ, and produce ascites. In such cases, the author remarks, the recumbent posture and diuretic remedies will often relieve the ascites in a remarkable degree, and after a time the tumour often shifts its place, and the local pressure is removed.

Dr. S. denies, so far as his observations extend, that dropsy is ever produced by rupture of the lymphatics or thoracic duct, or by simple obstructions of glands causing pressure upon the lymphatic vessels.

Ascites does not succeed eruptive diseases as frequently as anasarca. Dr. S. has never seen it alone. He has heard of one case which was entirely cured by the use of the infus. pyrolæ umbellatæ, and continental writers speak highly of spartium scoparium, and an infusion of the root of the ononis spinosa; when it occurs early, it is probable, he adds, that its progress would be best stopped by antiphlogistic remedies and saline purgatives.

As an appendix to his own observations, Dr. S. has presented a translation from the Italian of Geromini's well known work on the causes and cure of dropsy, in which it is attempted to be proved, and by arguments of an extremely plausible character, that dropsy in every instance is dependent upon inflammation. D. F. C.

ART. XII. *A Treatise on Tetanus, being the Essay for which the Jacksonian Prize for the year 1834, was awarded by the Royal College of Surgeons in London.* By THOMAS BLIZARD CURLING, Assistant Surgeon to the London Hospital and Lecturer on Morbid Anatomy. 8vo. pp. 236, London, 1836.

The treatise of Mr. Curling is valuable, not because the author has actually succeeded in throwing any new light upon the subject of which he treats, but from its containing a very full and able digest of all the known facts in relation to a disease, of the true pathology and proper management of which the views of physicians have heretofore been extremely vague and confused. Every important and well authenticated fact connected with the disease contained in the medical writings of a recent date, the author appears to have collected with great industry, and he has arranged the materials thus obtained, in such a manner as to present one of the best histories extant of the causes, nature and treatment of tetanus.

We would not wish to be understood as subscribing to the entire correctness of all the inferences which Mr. C. has deduced from the facts which he details,—we are persuaded, however, that his views generally considered, will be found to accord with the result of future observations.

As an evidence of the high opinion we entertain of the work before us, we shall present to our readers a complete analysis of its contents.

Passing over the two first sections which merely relate to the definition and leading forms and varieties of tetanus, we are presented in the third section with the following graphic sketch of its leading symptoms:

“At the commencement of an attack of tetanus, the patient generally complains of stiffness or uneasiness about the muscles of the jaws, throat, or neck, which is frequently attributed by him to having caught cold, and described as a sore throat or a stiff neck. A difficulty is experienced next in rotating or moving the head, and in masticating and swallowing food, attempts to expand the jaws occasioning considerable distress, the nature of the disease often being first detected on requesting the patient to show his tongue. A painful traction or sense of tightness is soon felt about the cartilago ensiformis, passing backwards to the spine, and the muscles along the back and those of the abdomen become affected with spasms, which may afterwards extend to the limbs. The patient is bathed in a profuse perspiration, and suffers greatly from thirst, but the attempt to swallow often causes such a distressing paroxysm that there is complete inability to drink or to take any nourishment. The larynx becomes raised, the angles of the mouth drawn up, the alæ of the nose elevated, the nostrils expanded, the eyes fixed and prominent, the brows contracted, and the forehead wrinkled, giving to the countenance an expression of great distress and anxiety, and frequently a peculiar grin, called by the earlier writers *risus sardonicus*. The voice is sometimes altered, being harsh and disagreeable, and, in the violent paroxysms, the tongue, being forced between the teeth, frequently becomes severely lacerated and torn, rendering the mouth bloody, and adding very much to the frightful appearance of the countenance. The shoulders are drawn forwards, and the body, forced into different postures, according as one set of muscles is more strongly contracted than their antagonists, is sometimes, during the paroxysms, so violently thrown about as only to be protected from injury by the care of assistants. The pain at the præcordium increases, respiration is embarrassed and hurried, and the pulse becomes quick and irregular. As the disease advances, the highly painful and distressing paroxysms recur more frequently, being renewed every ten or fifteen minutes. They also become more violent and painful, and are induced by the most trivial circumstance, as opening the door, a draught of air, or the least attempt to move or swallow. An agonizing sense of suffocation is experienced, the face appears livid, and, in a state of violent convulsion, life frequently terminates suddenly; or sometimes all the symptoms are abated just previous to death, and the patient afterwards sinks as if all the powers of the system were exhausted by the long and violent contractions of the muscles, and by the excess of pain and suffering.

“This must be received rather as an enumeration of the order in which the different symptoms, when present, generally appear, than as an accurate representation or exact account of the usual progress of the disease. For there is every possible variety and irregularity in the symptoms, both in different cases and at various periods of the same case.”—pp. 5–7.

The expression of the countenance in tetanus is not invariably the

same in every case. Aretæus observes, that the distortion of the face is so great that patients are not recognised by their most intimate friends. A case is related by Dr. Farr, in which the spasms of the muscles of the face had so deeply impressed the marks of age on the countenance of the patient, who was only 26 years of age, as to induce all who saw him to believe that he was at least sixty. The author once observed the same circumstance in an equally remarkable degree. In one case the mouth was kept firmly closed by the action of the orbicularis oris.

The pain experienced in tetanus generally varies according to the violence of the spasms. The spasms are particularly painful when occurring in muscles implicated in the wound, especially if in a state of inflammation. The continued spasm, or rigidity of the muscles, is often, however, unattended with pain, so that it is only during the paroxysms that any sense of uneasiness is experienced. Some remarkable instances have been described, in which there was complete immunity from suffering during the most acute paroxysms; and Sir Gilbert Blane refers to an extraordinary case, which proved fatal, in which the sensations excited by the violent muscular contractions was a sort of tingling of a pleasurable nature. Pain at the præcordium is rarely absent in acute tetanus. Some writers have supposed it to be invariably a fatal symptom, but many cases have occurred, in which, although this symptom was severe, the patients recovered. The cause of this pain the author considers to be correctly referred to spasm of the diaphragm. When very severe there is usually very considerable opisthotonos, which appears to be partly owing to the instinctive efforts of the patient, in order to relieve the painful traction at the præcordium. It is frequently one of the earliest symptoms, but sometimes occurs only at the termination of the disease. Respiration is laborious and hurried, being sometimes accompanied with a kind of catching of the breath.

“Inability to swallow arises from spasmodic action of the muscles of the tongue and soft palate, and probably from contraction of the cardiac aperture of the diaphragm. In the attempt at deglutition, fluids are often rejected with force through the nose and from the mouth, and such distressing paroxysms are induced by the spasms excited in the muscles of the larynx, that there is sometimes a horror even at the sight of fluids. The same circumstance constitutes an effectual bar to the introduction of a flexible tube down the œsophagus from one of the nostrils.”—p. 9.

The muscles of the eye are sometimes, but not generally, affected. The pupils the author has generally found contracted. The muscles of the extremities are less frequently the seat of spasm than those of the neck and trunk, and the wrists and hands are very seldom affected. The spasms sometimes commence in the limb which has been injured. In a case related by Dupuytren the muscles of the injured limb were permanently and painfully contracted, when no other part of the body was affected. In one case Mr. E. observed the spasms to be more severe in the injured limb than in the sound one.

By Parry, Currie, Travers, and Howship, it is believed, that in

fatal cases the heart itself becomes finally affected with spasms, and from this the death of the patient results. This opinion our author considers exceedingly problematical. That spasm of the heart can be an ordinary symptom of the disease is, he declares, certainly impossible; for it must be obvious, that if such were the case, the action of the heart, instead of being accelerated, which is universally admitted to be its condition in tetanus, must be greatly retarded, or even altogether arrested, so long as the spasm lasts. Without venturing to deny that the heart ever becomes affected with spasm, he considers that there is no evidence proving such to be the fact, or even rendering it probable, and that it is little better than a gratuitous assumption to account in this way for the somewhat sudden manner in which the disease frequently terminates. In all the cases of tetanus witnessed by our author, the action of the heart, as well as of the respiratory movements, has been in some degree accelerated, and during the paroxysms there has generally been a further increase of about ten or twelve pulsations in the minute, whilst towards the close of the disease the pulse has been feeble, irregular, and sometimes intermittent. In one case it was as much as one hundred and eighty during the paroxysms. He conceives that the frequency of the pulse, and the hurried respiration must be, in a great degree, ascribed to the forcible contractions to which the muscles are excited, especially during the paroxysms. The danger of the disease is not, however, exactly proportionate to the intensity of the spasms, but is influenced by the particular class of muscles affected. Mr. C. likewise remarks, that many of the remedies usually exhibited in large doses may exert considerable influence in increasing the heart's action, so that the condition of the pulse must be regarded as a very fallacious test of the severity or acuteness of the disease, and cannot therefore be depended upon as a guide in forming an accurate prognosis. The supposition that the middle coat of the arteries may in this disease become affected with spasm, Dr. C. rejects as altogether unfounded.

The obstinate costiveness which sometimes exists both previous to and during the disease, and which has led some pathologists to suppose, that the muscular structure of the intestinal canal also becomes affected with spasm, the author accounts for from the excessive cutaneous transpiration generally attending the disease, causing a more active absorption of the watery particles from and a diminution of the secretions poured into the alimentary canal; hence the fæces being deprived of their proportion of the excrementitious fluids, become indurated and reduced in bulk. The combined pressure also of the diaphragm and abdominal muscles, when these are permanently contracted, will tend to impede the peristaltic motion of the bowels. Great difficulty in the expulsion of the fæces must likewise arise from the patient, during the spasms, losing the control over those muscles which so materially aid the performance of that function; and also from closure of the anus, by the spasmodic action of the sphincter ani, which is sometimes so rigidly contracted as to prevent the introduction of a glyster pipe. In addition to these causes of constipation,

many of the remedies which are resorted to in the disease must assist greatly in inducing a torpid state of the bowels. Constipation does not, however, invariably attend.

Retention of urine is sometimes occasioned, remarks Mr. C., probably by spasms of the compressor urethræ, and great difficulty has thereby been experienced in the attempt to introduce a catheter. Mr. Morgan states that priapism occurs occasionally; the author has never witnessed it.

The muscles are observed to be relaxed during sleep, a striking example of which occurred to Mr. Mayo, in a boy who recovered from the disease. The spasms, however, in general, return the moment the patients awake. In chronic tetanus, or during the progress of recovery, and when the intervals between the paroxysms are considerable, sleep, the author observes, may ensue and the muscles become relaxed; but in acute tetanus, although sleep may sometimes occur as the result of exhaustion or of narcotic influence, its duration is but for a short period, lasting only until sufficient reaction is established to support the renewal of spasmodic contractions.

The patient is bathed in perspiration, especially during the paroxysms of tetanus; the secretion often possessing a pungent and peculiar smell—but this profuse perspiration, even when it extends over the whole body, is unattended with the slightest amelioration in the symptoms of the disease. A miliary eruption frequently accompanies the perspiration, occasioned probably by the active determination to the skin.

The skin usually feels hot, and it appears that the heat of the body is sometimes above the natural standard. In one case a thermometer placed in the axilla was raised to $110^{\circ} 75'$ Fahr., and in another to 105° .

The urine is usually high coloured, and scanty in quantity, owing, no doubt, to the influence of the cutaneous secretion upon the renal; in two instances observed by Dr. C. where there was scarcely any increase of perspiration, little alteration was noticed either in the colour or quantity of the urine.

“The tongue is generally moist at the commencement, but subsequently, when perspiration becomes profuse, and in cases attended with fever and inflammation, there is excessive thirst, accompanied with a dry state of the tongue. The appetite commonly remains, even when there is inability to swallow.

“The functions of the brain and the organs of sense continue unimpaired, during even the most distressing paroxysms, and the mind is clear and occasionally cheerful. In some few instances delirium has occurred a short time previous to death. The remedies which have been exhibited, may possibly contribute to produce this derangement.” p. 22.

Traumatic tetanus is generally unattended with fever. “It is true,” remarks Mr. C., “that in some instances even of the traumatic form, fever has been present, and the blood has been found cupped and buffed; but in nearly all such cases the symptoms of tetanus are independent of those of inflammation, the latter sometimes co-existing with the former, but arising from distinct and often accidental

causes." Tetanic symptoms may, however, result from inflammatory action in the medulla spinalis; this, however, rarely occurs in the traumatic, but is occasionally the cause of the idiopathic disease. Inflammation and fever, therefore, when present, must not be viewed as the necessary effects of the spasmodic disease.

"Recovery from tetanus takes place very gradually. Of fifty-eight cases which terminated successfully, eight were cured in the course of a week; three in ten days; four in a fortnight; four recovered at the end of three weeks; fifteen at the end of a month; four after five weeks; eight after six weeks; three at the end of eight weeks; three after two months; and in two the symptoms were not removed till after three months. Even after the spasms have subsided, it is often a long time before the muscles can regain their tone and freedom of action." * * * *

"Even after a slight cramp in the leg, some degree of stiffness in the muscles often remains for several days; but after such violent action as occurs in the paroxysms of tetanus, by which muscular fibres are not unfrequently lacerated and vessels ruptured, a return to their former condition must necessarily be very gradual. The warm bath, friction, and gentle exercise, are the means best adapted to restore the muscles to their original state." pp. 23, 24.

The ordinary causes of death in tetanus are asphyxia and exhaustion, and death is retarded or accelerated, according to the violence of the symptoms, the class of muscles principally affected, and the constitution of the patient. Asphyxia may result from spasmodic closure of the glottis alone, or by the spasms entirely suspending the regular action of the respiratory muscles. When from the first, death occurs somewhat suddenly; when from the latter, death approaches slowly, the respiration being for several hours hurried, laborious and irregular; the lungs become gradually congested; the motions of the chest being impeded, the expulsion of the inspired air is prevented, and thus a fatal termination tardily ensues. Often, however, the two causes acting together speedily put an end to the patient's sufferings; when death takes place from exhaustion, the paroxysms become less acute and frequent, the pulse flags, the muscles relax, the eyes become dim, and the patient gradually sinks.

"In a case of imminent danger from suffocation, it has been suggested that relief might be afforded by an opening made in the trachea. Such a proceeding can only be available when asphyxia is produced by spasm of the muscles of the glottis, in which case tracheotomy might probably afford an opportunity for the exhibition of remedies adapted to control the paroxysms. As these cases are generally very urgent, little more can be expected from the operation than postponement of a fatal issue for a short period; but it would certainly be justifiable as a *dernier resort*. I am not, however, acquainted with any instance in which tracheotomy has been resorted to." p. 26.

The author remarks that we have no data from which a correct estimate can be formed of the frequency of tetanus in comparison with other diseases, of the probability of its occurrence after wounds, or of its mean rate of mortality, either in the traumatic form, or in the idiopathic.

"In the table are included seventy fatal cases, from which it appears that the disease is equally fatal at every period of life, from the age of ten to forty-five. Idiopathic tetanus is far less frequently fatal than traumatic, but the mortality from the former is much greater in warm climates than in the more temperate

regions. Tetanus is both less frequent and less fatal in the female sex than in the male. Of the 128 cases in the table, sixteen were females, being to the males in the proportion of one to eight. Of these 16 cases, 4 only were fatal, whereas, of the 112 cases of males, 66, or more than one half, died. The comparative rarity of tetanus in women is partly accounted for by their being less exposed, both to the predisposing and to the exciting causes of the disease; and since it is observed to occur more frequently in persons of a robust constitution and of great muscular strength, females are supposed to be less susceptible of it."

"In most of the cases in the table, the patients were attacked between the ages of ten and fifty; four only having occurred after the fiftieth year, and three before the age of ten. The duration of the disease before its fatal termination varies considerably, being dependent upon those circumstances alluded to, when describing the immediate cause of death, and it is also often influenced by the extent of the original injury." pp. 29, 30. * * * *

"In the table, 53 cases were fatal within 8 days after the appearance of the symptoms; 11 by the following day; 15 on the second day after; 8 on the third, 7 on the fourth, 3 on the fifth, 4 on the sixth, 3 on the seventh, and 2 on the eighth, but very few having lasted longer." p. 32.

Causes.—The traumatic, which is the most common form of tetanus, is consequent upon every possible variety of injury, and attacks in every condition of the wound. It occurs after the slightest and most superficial abrasions, as also after the most complicated contusions, lacerations and fractures. In eleven cases in the table it occurred after amputations, four being at the shoulder joint. It has also occurred after excision of the mamma, after the operation of tying the external iliac and the femoral artery; after castration, the operation of cupping, the application of a seton to the chest, the extraction of a tooth, the injection of a hydrocele, a severe flagellation. Larrey has recorded an instance in which the disease was produced by a fishbone lodged in the fauces. Mr. Morgan witnessed two cases consequent upon the blows inflicted by a schoolmaster with his cane—they both terminated fatally. Tetanus is said to occur most frequently after punctures and lacerations of fascious structures and of nerves, and after wounds of the hands and feet. It appears from the table that in 34 instances the disease was occasioned by injuries, many of them very trivial, of the hands and fingers; and in 35 cases by injuries to the feet or toes. In 64 instances the wounds were on some part of the lower extremities; in 46 of the upper extremities. Mr. O'Beirne states that he never saw the disease after an injury of the head, but in eleven cases in the table the wounds were either on the face or scalp. Dr. Rush remarked that there was invariably an absence of inflammation in the wounds causing the disease. In many of the cases in the table the primary wound was completely healed and almost forgotten when the symptoms of tetanus appeared.

The interval between the infliction of the injury and the accession of tetanic symptoms varies considerably. In one case the disease is said to have appeared almost instantaneously; in another within one hour; in a third within two, and in a fourth within eleven hours. In 81 instances symptoms were first developed from the fourth to the fourteenth day after the wound, and in 19 they were evinced on the

tenth day. In 13 cases witnessed by Mr. Dickinson, at Grenada, the period varied from eight to fourteen days. It has been noticed that the longer the interval before the appearance of symptoms, the more chronic is the disease, and the greater the probability of recovery.

“Tetanus is a disease which is met with in every part of the globe, but it occurs oftener in sultry than in temperate climates, and is observed to prevail more at the hot seasons, or during sudden changes from heat to cold, especially in a moist state of the atmosphere. Idiopathic tetanus generally arises after exposure to damp and cold, and even in the traumatic form it has frequently happened that patients have caught cold previous to the accession of symptoms.” p. 37. * * *

“Tetanus in every form is a common disease in the West Indies, and it has been noticed that the negroes are more subject to it than the white population and Europeans. * * * This has been attributed by some authors to the negro possessing a greater predisposition to the disease; by others, to his being more frequently subjected to its exciting causes, as exposure to the scorching rays of the sun, and to the night dews, to his working during the rainy seasons and in unhealthy situations, and to his being more liable to the reception of wounds, in consequence of the feet and other parts of the body being unprotected by clothing. To these may be added intestinal worms, and other disorders of the digestive organs, to which, from the nature of his food, he is more subject than the European. Of late years, however, the disease has become less frequent in the West Indian islands than formerly, which is justly ascribed to improvements in the treatment of wounds, in diet, cleanliness and ventilation—to the avoidance of exposure to damp, cold, and sudden vicissitudes of weather, and to greater attention being paid to the state of the bowels. Tetanus is also now much less common in the army and navy than in former years.” pp. 40, 41.

Prognosis.—The prognosis in acute tetanus must always be unfavourable. Instances of cure are alluded to by the author, and he remarks, if in the progress of recovery the symptoms have assumed a chronic character, we may fairly infer that the severity of the disease has been diminished, and the symptoms modified by the treatment pursued. In traumatic tetanus without inflammation, as commonly met with, there are several circumstances to be taken into consideration—the climate, sex, state of the wound, duration of the interval between its occurrence and the appearance of tetanic symptoms, the progress of the disease, the class of muscles more particularly affected, the length of interval between the paroxysms, the relation which exists between the natural powers of the patient and the violence of the involuntary muscular contractions. The most important of all is the state of the respiratory muscles. If there be any disposition to spasm in the muscles of the larynx, there is not only imminent risk of suffocation, but the attempt to swallow is so liable to induce a paroxysm, that we are utterly excluded from the opportunity of administering medicines internally, and of fulfilling one most important indication, supplying stimulants and nourishment. In the more chronic forms of tetanus, in those cases in which the access is slow, the spasms by no means violent, the paroxysms slight and occurring at long intervals, and when the patient can obtain sleep, whether traumatic or not, we may generally anticipate a favourable result.

Diagnosis.—The peculiar expression of the countenance in tetanus,

the dragging sensation at the lower part of the sternum, and the sudden increase of the continued contraction at varying intervals, are at all times sufficiently diagnostic.

“The only disease for which it can be mistaken is hydrophobia. In addition to the symptoms just mentioned, it is distinguished from the latter by the normal state of the intellectual functions, and by the nature of the spasms. In hydrophobia there is more or less mental aberration, a restless and sometimes furious state of excitement, accompanied with a remarkable acuteness of the organs of sense and an expression of countenance, and a manner so striking, that when once seen they are rarely forgotten. The spasms, too, are clonic and of short duration, and are succeeded by a period of complete relaxation. It is only those cases of tetanus where the guttural spasms are attended with a dread of fluids that can be mistaken for hydrophobia; but the circumstances already described, together with the difference in the mode of origin and period of access, are fully adequate to prevent these two diseases from being confounded.”—p. 42.

Pathological lesions.—The following appearances are often presented by the brain and its membranes, after death from tetanus. “Congestion of the sinuses; the vessels of the pia mater filled with florid blood; more or less increased vascularity of the cerebral substance; slight serous effusions between the membranes and in the ventricles.”—In cases of tetanus, in which death has been occasioned by the spasms producing asphyxia, Mr. C. has noticed that the sinuses and larger veins are more particularly congested, and that the blood is of a darker colour than in other cases, where the injection appears to occupy the small arteries, the networks formed by their extreme ramifications being so minutely filled with blood of a florid hue, as often to impart to the pia mater an intensely bright red colour. In some rare instances changes of a permanent nature have been observed. Bouillaud relates the case of a boy, who had, during life, symptoms simulating tetanus, in which a tubercle the size of a large egg, and five or six smaller ones were found after death in the substance of the right hemisphere. In a case described by Dr. Bright, in which the symptoms appeared at the end of four weeks after a blow on the left side of the head, after death there was found a collection of pus about the extent of a large nutmeg, contained in a firm very vascular cyst, within the substance of the brain about the centre of the middle lobe, close to the part where the blow had been received.

Serous effusion with increased vascularity is generally observed in the membranes investing the medulla spinalis, as well as a turgid state of the blood-vessels about the origin of the nerves. These appearances are not, however, invariably met with, for it is distinctly stated in many of the cases in the table, that the spinal marrow and its coverings were natural. Sir Benjamin Brodie mentions that he has never discovered any morbid changes in these structures in cases of tetanus. In some instances the substance of the medulla has appeared somewhat injected, and in a case related by the author, this seemed to be confined to the anterior columns of the cord. He remarks that in an investigation of the cause of these lesions, the circumstance of position should not be overlooked.

As far as the author's observations enable him to judge in cases of

traumatic tetanus, the appearances which have been alluded to, are, in most instances, to be met with in the spinal canal, but in the cranium they are less frequently detected. Here then, he adds, a question of the utmost practical importance offers itself for consideration; are these appearances to be regarded as indicating that inflammatory action has existed in some part of the brain, spinal cord, or their investing membranes? Inflammation in these structures is viewed as the cause of tetanus by many of the continental pathologists, amongst whom may be mentioned Broussais, Larrey, Magendie, Recamier, Prof. Frank, and Brera; and by Reid, Kennedy, and other writers in England; and as this opinion must influence us very materially in determining the proper mode of treating the disease, it is necessary to examine well the grounds upon which it is founded. After reviewing these and adducing various important facts bearing upon the question, Mr. C. remarks—

“If, therefore, it has been demonstrated, that certain appearances generally observable in the nervous centres in cases of tetanus, are frequently met with under circumstances, and from causes any thing but inflammatory, and that nothing expressive of such action is ordinarily remarked in the state of the pulse, of the blood, or of the secretions of persons affected with this disease; and moreover, if it appears that the morbid changes which are almost the constant results or terminations of active inflammatory disturbance in these important structures are altogether wanting in pure cases of the spasmodic disease, it must then be admitted that tetanus is not entitled to be considered as an inflammatory affection. I say pure cases of the disease, because in coming to this conclusion it is not attempted to deny that tetanus is ever attended with inflammatory symptoms or changes, but only, as will be more fully shown, that the nature of the morbid action giving rise to it is [not] essentially inflammatory. But appearances in the medulla oblongata and spinalis, of a less equivocal character than those already described, are stated to have been found, more particularly in cases of idiopathic tetanus, or of traumatic when occurring after injuries of the head or of the spine. In all those instances, however, of which we have any detail of the history and progress, during life, it will be seen that they were clearly distinguished by symptoms sufficiently expressive of an inflammatory character. The prominent symptoms referrible to inflammation in the spinal cord and its membranes, according to Parent-Duchatelet and Martinet, Ollivier, and Abercrombie are, an acute pain extending in the direction of the spine—tetanic contraction of the muscles, especially of the back, and posterior part of the neck, sometimes producing complete opisthotonos—rigidity of the muscles of the extremities, and very frequently paralysis—febrile disturbance, with a quick pulse—restlessness, and occasionally high delirium, the patient often dying comatose. But although inflammatory affections of the medulla and its membranes, are clearly distinguished from genuine tetanus by some of its leading symptoms, yet the concurrence of permanent contraction of the muscles, especially in cases where the spasms are severe, and the inflammation is the consequence of external violence, has caused many of them to be mistaken for the latter disease.”—pp. 54, 55.

In some few instances blood has been found extravasated within the spinal sheath—other morbid changes, of an anomalous character, have been discovered, the causes of which, as well as their connexion with the disease under consideration, are far less obvious than those already described. The changes alluded to, are a deposition of a red and very consistent fluid in the cellular texture between the dura

mater of the cord and the bony canal of the spine, in the dorsal region, serous effusion within the membranes, and the arachnoid of the medulla covered with an albuminous concretion for four inches (Ollivier;) a large quantity of viscid yellow serum under the outer covering of the spinal cord (Burserius;) bony and cartilaginous deposits beneath the arachnoid of the medulla spinalis in the dorsal and lumbar regions, distinct, small in size, and of the thinness of paper; increased vascularity of the spinal marrow with considerable effusion and a number of small bony patches on the pia mater of the cord; small laminæ of bone on the dorsal division of the cord. Travers states that in the cases which have come under his notice, some morbid deposition of this kind was discovered in the substance of the arachnoid tunic covering the medulla in five out of eight; the author, however, has examined the spine with care in at least a dozen cases, but has never met with it.

Mr. Swan states that after tetanus he has observed a preternaturally injected state of the minute vessels supplying the ganglia of the sympathetic, especially the cervical and semi-lunar. Similar appearances had been previously noticed by Dr. Aronssohn and Andral. On two occasions the author has found the cervical ganglia unusually vascular, whereas, in another instance they were natural. Dupuy states, that he has frequently discovered inflammation and disorganization of these ganglia, and of other nervous trunks in horses that have died of tetanus.

The nerves have, in several instances, been found injured, torn, or lacerated, and inflamed at the seat of the original wound—and in a few cases splinters of wood, bone, and other foreign substances have been detected imbedded in or in contact with the principal nerves in the vicinity of the wound. In some instances redness or unusual vascularity of nerves has not been confined to the seat of the wound, but was observed in different parts of their course as far as their origin from the spinal marrow.

“The consequence, remarks the author, of a continuance of inflammation in a nerve is a deposition of coagulable lymph between its fibrils, causing an increase in size, which is distinctly seen in the extremities of the nerves affected with chronic inflammation after amputation. This morbid change was remarked at the seat of the wound in several of the cases which have been mentioned, for the nerves are described to have been thickened, swollen and red. But in other cases the appearances, amounting to nothing more than preternatural injection, cannot be considered as consequent upon inflammatory action.”—p. 74.

The violent action to which the muscles are excited in tetanus, has occasioned, in severe cases of the disease, serious lesions of their structure. These consist chiefly in laceration, a softened state of their fibres and effusion of blood upon their surface, or within the sheath of those of the extremities and abdomen. “The muscles, remarks Mr. C., are not only unusually rigid after death, but the disposition in the blood to coagulate is often delayed, and sometimes even altogether lost.”

The lungs are often found gorged with blood, and sometimes in a state of engouement. The state of asphyxia, in which the disease so

frequently terminates, is quite sufficient to account for this condition. An inflamed state of the mucous membrane of the alimentary canal after tetanus is noticed by Swan, M'Arthur and Andral. Many writers notice the frequency with which worms are found in the bodies of those who have died from tetanus; whether their presence had any agency in the production of the disease is considered doubtful. The papillæ maximæ, at the root of the tongue, are sometimes found hypertrophied, and the mucous lining of the larynx highly injected, and containing a quantity of frothy mucus. Larrey observed, in most of the bodies of the tetanic patients he examined, the pharynx and œsophagus much contracted, and their internal membrane red, inflamed, and covered with a viscid, reddish mucus. Similar appearances are generally met with after death from hydrophobia. In both cases they are readily accounted for by the spasms and irritations that exist in those parts during life.

The author enters next upon the consideration of the "Theory of tetanus;" on this subject we shall be able to present only his general summary:—

"From what has been observed in the foregoing pages, I am induced to infer,—

"1. That tetanus is a functional disease of the nervous system, that is to say, a disease unaccompanied with any perceptible lesion of structure, the nature of which, although essentially distinct from inflammation, is completely unknown. There are, therefore, no morbid changes peculiar to tetanus, and by which it can be recognised.

"2. That the seat of this peculiar morbid action, termed *tetanic irritation*, is the *tractus motorius*, on either side, wholly or in part, the superior being the portion most generally affected.

"3. That the result of tetanic irritation in the tractus motorius, or medulla, is a supply to the muscles of a stimulus to abnormal action, which, although limited to the muscles subservient to the will, is, nevertheless, totally without its control.

"4. The tetanic irritation is excited in two ways; *first*, by a noxious impression propagated to the medulla from distant nerves, (most probably sentient) which impression may be caused by a wound, cold, or any other source of irritation; *secondly*, by inflammation in the brain, spinal cord, or their investing membranes, either idiopathic or occasioned by direct injury to these structures, or extending continuously from the nerves of a wounded part to the medulla. Traumatic tetanus commonly arises in the first way, its origin in direct injury to the cord, or in inflammation extending from an injured nerve, being exceedingly rare.

"5. That in pure traumatic tetanus, the primary impression is confined for an indefinite time to the nerves of the part injured, being transmitted at some subsequent period to the medulla, and thus exciting the disease.

"6. That when tetanic irritation is once fully excited in the medulla, which is made manifest by spasmodic contractions in the muscles, the disease is independent of the exciting cause, and does not cease upon its removal.

"7. That the nervous system in some individuals is more disposed to take on this morbid action than in others, and that as a general rule, males are more susceptible of it than females, and negroes than whites.

"8. That certain morbid states, as disorders of the digestive organs, the influence of particular climates, and a deleterious atmosphere, render the system more susceptible of this disease.

“9. That the derangement of the vital organs in tetanus is the result of the inordinate action of the voluntary muscles induced by the disease; the disturbance and suspension of different functions, and even fatal exhaustion, being chiefly if not solely, referable to the violent muscular contractions. In fact, the tetanic irritation directly interferes with, or affects, no organ nor part whatever besides the system of voluntary muscles.

“10. That tetanic irritation often gives rise to a determination of blood to the cord and its meninges, and to the nerves proceeding from the site of the wound and to the affected muscles, the result of which, in the medulla, is an increase in the natural secretion of the arachnoid. The minute vascular injection of the cord and the nerves, together with the serous effusion at the base of the brain and between the spinal membranes, being nothing more than occasional effects of the disease, are by no means constantly présent after death.” pp. 121-3.

In regard to the *treatment of tetanus*, the author considers first those means which have been proposed with the view of arresting the symptoms of the disease, by removing or altering the morbid action in the part which appeared to be primarily deranged. The application to the local injury of stimulants as a prophylactic measure the author totally rejects as being unsanctioned by experience of its utility, and unsupported by any rational views of the pathology of tetanus.

“To prevent the propagation from the wound of the irritation supposed to be the cause of the disease, two plans, remarks Dr. C., have been adopted: 1. Amputation or excision of the wounded part: 2. Division of the nerves proceeding to the seat of injury.”—pp. 127-8.

1. *Amputation*.—After enumerating the evidence adduced for and against the operation, Mr. C. remarks, that although in several of the cases recorded in which early amputation appeared to be beneficial, “it is almost impossible to ascertain, with certainty, how far amputation was of service, yet it must be admitted that some of them, particularly the case recorded by Mr. Wayte, tend to confirm the propriety of the practice recommended by Larrey. The evidence, however, of the English army surgeons of late years is by no means favourable.” In the hands of M^cGregor, Hennen, Guthrie, Cooper, Grimstone, and Brodie, as well as of Dupuytren it was found to be of no benefit in arresting the disease.

“Many nerves are necessarily divided in this operation, and cases have been adduced in which tetanus was the sequel of its performance. It is altogether so severe and serious a mode of treating the disease, that we can scarcely ever be warranted in resorting to it when the original wound is slight, especially as, if employed under the most favourable circumstances, a successful issue can never be depended on. In chronic tetanus, as patients usually recover, it is certainly inadmissible, even when the wound is severe and in an unfavourable state, unless its condition be sufficiently bad to demand the operation independently of the spasms. Amputation can only be regarded as a justifiable proceeding after a severe injury of the extremities, as a compound fracture, or an extensive laceration, immediately that there is the slightest indication of spasm; for if delayed until the disease is more advanced, instead of proving beneficial, it will tend rather to aggravate the symptoms, and to render the constitution less able to sustain the debilitating effects of the spasms.” pp. 131-2.

2. *Division of the Nerves*.—This operation was adopted with success by Baron Larrey in two cases after symptoms of tetanus had occurred, and by Dr. Murray in one case under similar circumstances,

which are the only instances on record where this method of treatment was employed.

“In the first case,” Mr. C. remarks that “however beneficial the operation might have proved in relieving the parts, it is very questionable whether the good effects which followed were in any degree owing to the division of nerves. In the other three, the nerves were divided as soon as there was the slightest indication of tetanic symptoms; and it is fair to presume, that an attack of the disease was warded off by the operation. As was remarked of amputation, unless the operation be performed very early, there can be little hope of a favourable result. When it is feasible to divide all the nerves proceeding to a slight wound, this plan is infinitely preferable to amputation, since all the advantages of the latter may be obtained by an operation far less painful, severe and serious in its consequences. Paralysis may be the immediate, but it is not likely to be a permanent result. This operation, therefore, may be regarded as well worthy of further trial.”—pp. 135–6.

The author notices the suggestion of Dr. Pennock, of this city, to employ pressure by weights, or ligatures, or to apply exhausted cups over the wound or in its immediate vicinity in order to paralyse the wounded nerves, and thus prevent the occurrence of tetanus; and if in this manner the constitutional symptoms should be arrested, as a security against their return, to make, before the cup is removed, an incision so extensive as effectually to remove the wounded portion of the nerves; and remarks in relation to it that “if in a case in which the wound is cutaneous, there is any hesitation in dividing the nerves, this proceeding might be tried.”

CONSTITUTIONAL TREATMENT. Purgatives.—As sources of irritation in the intestinal canal, and obstinate costiveness so frequently exist in cases of tetanus, too much importance, Mr. C. remarks, cannot be attached to the employment of purgatives. A brisk cathartic, by causing the expulsion of worms or unhealthy fæces, has produced almost immediate relief in the idiopathic form.

“Perhaps one of the most important consequences of the free operation of purgatives arises from their favouring the action of those remedies which more immediately influence spasmodic contractions of the muscles; indeed, until the bowels have been fully relieved, it is almost useless to resort to other medicines. Those purgatives should be selected which, being readily soluble, act quickly and powerfully on the intestinal canal, as castor oil, oil of turpentine, and croton oil, especially the latter, since in addition to its active and rapid operation, in cases of difficult deglutition, a few drops upon the tongue will generally be sufficient to obtain the required effects.”—p. 138.

When spasm of the sphincter or levator ani muscles causes an impediment to the free evacuation of the fæces, an enema of an infusion of the tobacco leaf, or containing laudanum, will, most probably, be found successful. In cases where no intestinal derangement or irregularity appears to exist, not only should a full dose of castor oil be given, but the action of the bowels must be steadily maintained throughout the disease.

“Having removed any source of irritation existing in the intestinal canal, the next important indication is to allay the excitement in the nervous system giving rise to undue muscular action. For this purpose, depletion, and all kinds of sedatives and antispasmodics have been freely resorted to. Camphor, musk, digitalis, stramonium, conium, hyosciamus, belladonna, and lead, have proved utterly inadequate.”—p. 139.

Mercury has been frequently tried, and administered to the extent of producing ptyalism, both in idiopathic and in traumatic tetanus. The experience of Larrey, M'Gregor, Mosely, Wells, Carlisle, Thompson of Jamaica, Maxwell, Swan and Howship is decidedly unfavourable to the curative effects of the remedy. In fifty-three cases where it was employed, thirty-one proved fatal. Of the twenty-two cases which recovered, in one, it is stated, that although salivation was produced, the symptoms continued to increase until the quantity of opium was augmented. In another case mercury was not resorted to until the disease had been established seventeen days; and in a third the patient was improving before ptyalism was produced. In twenty of these cases of recovery, opium was combined with the mercury; and of the two treated without it, in one tobacco injections were employed. In eleven of the cases in which mercury was used alone, or in conjunction with some trivial remedy, as the warm bath or blisters, all proved fatal except one. To the influence of mercury in arresting the progress of inflammation may, according to Mr. C., be attributed its efficacy in tetanus when attended with inflammatory or febrile disturbance; and in cases in which tetanic spasms are consequent upon inflammation in the spinal cord or its membranes, he believes that great benefit may result from its free exhibition.

Blood-letting. Tetanus not being essentially an inflammatory disease, most cases of the traumatic form being unaccompanied with febrile disturbance, or with any symptoms indicating the necessity for active depletion, an antiphlogistic treatment is, therefore, generally unnecessary for its removal; but in those cases where inflammation is the cause of the tetanic irritation, which though rare in the traumatic form, is a frequent occurrence in the idiopathic, abstraction of blood may be highly beneficial—but so soon as the fever and inflammation have subsided, sedatives may afterwards be necessary, for although the cause originally inducing the disease has been removed, the spasms sometimes remain. Mr. Swan and others have advised blood-letting with the view of removing congestion of the vessels of the medulla spinalis; the author, however, observes, that unless other circumstances indicated the propriety of local depletion, such a practice should be adopted with the utmost caution, since in some cases it might aggravate, and in none is it likely to remove the disease.

Of twenty-six of the cases in which blood was abstracted and other remedies also resorted to, thirteen died. Two other cases unattended with inflammatory symptoms, were treated by bleeding alone; both terminated fatally. In another case the pulse was full and strong, beating about 140 in a minute; Mr. Earle bled the patient repeatedly, and, after every venesection there was decided remission of the spasms. The blood was remarkably buffed and cupped, he seemed to be in a fair way for recovery, when the disease was, upon two occasions, aggravated by the friends giving him, most injudiciously, wine and porter. He died afterwards, apparently from exhaustion.

Loss of blood appears to favour the operation of medicines in this disease, as in other affections.

"In traumatic tetanus occurring to a highly plethoric individual, with a hard and full pulse, but without any symptoms of febrile disturbance, bleeding may sometimes perhaps be resorted to with advantage in the first instance, although I should always be backward in employing it. But, at a more advanced stage of the disease, and in a debilitated state of the system, even moderate bleeding is altogether inadmissible." p. 149. * * *

"*Counter irritation*, either over the affected muscles or in the course of the spine, is of no service, unless the disease be inflammatory, in which case benefit may perhaps result from the application of it along the back. Dr. Chalmers states that blisters have a most pernicious effect; and the only advantage to be gained from them in pure traumatic tetanus, arises from their rendering the cutaneous surface favourable for the absorption of appropriate remedies." p. 150.

Opium. There is no question that in many instances opium has succeeded in allaying tetanic spasms; but, as it is resorted to in by far the greater number of the cases which occur, too much importance must not be attached to its occasional success. Opium, in various forms, and in conjunction with other remedies, was employed in eighty-four cases. Of these, forty-five recovered, of which ten were females. The result of the ample trial which it has had, both in small and large doses, frequently repeated, has tended, notwithstanding, to diminish the confidence of practitioners in its efficacy. Sir James M'Gregor declares that from the extensive trials he has made in tetanus with opium and mercury, he considers them as perfectly inert when the disease is acute or fully formed; they should only, he adds, be used as *adjuvantia*. Mr. Travers remarks that opium is both inefficient and objectionable. "In idiopathic tetanus, in this climate, after a free action of the bowels, opium generally succeeds in removing the spasms. Experience, however, has fully shown, in whatever way it may be explained, that when exhibited, even in the largest doses, this remedy cannot be relied on in the treatment of the acute form." Mr. C. believes that in traumatic tetanus, if no amelioration or effect result in a short time from a full but not inordinate dose of opium once or twice repeated, it will be utterly useless, and indeed a most fruitless loss of time, to persevere in the administration of it in still larger doses.

"In the treatment of tetanus it is a most important consideration that the system can be effected by remedies introduced into the large intestines. When medicines taken by the mouth fail in producing their effects—when the trismus is complete, or when the risk of suffocation precludes even the attempt to swallow or to introduce an elastic instrument into the stomach through the nostrils, we may sometimes succeed in this way in obtaining the influence of opium. This remedy has indeed been exhibited in glysters upon several occasions with advantage. In two cases of acute traumatic tetanus, unaccompanied with inflammatory symptoms, I have seen recover, the spasms were gradually removed by laudanum injections frequently repeated, so as to keep the system constantly under narcotic influence." * * * In a few of the cases, referred to in the table, opiate injections were resorted to in conjunction with other remedies, and in some instances with a successful result.

"In the fourth volume of the Medical Transactions, there is a paper by Dr. Latham, in which the *pulvis ipecacuanhæ composita* is strongly recommended, and several cases are related in which it appears to have been given with success, in doses of 10 grs. every two or four hours. Of three cases in the table, treated with Dover's powder, two recovered. The beneficial influence of this preparation must be attributed to the opium which it contains.

“Dr. Stutz of Suabia, has published the particulars of three cases of traumatic tetanus which were cured by opium combined with alkalies, and warm baths impregnated with the deutoxyde of potassium and lime. It is supposed that the alkali favours the operation of opium upon the system. I do not know what benefit could be derived from the baths, but M. Fournier-Pescay mentions that he has succeeded in curing a case by baths medicated in this way.” p. 163. * * *

Tobacco.—“The earlier writers had great confidence in the efficacy of tobacco, especially of the *ol. tabaci*, when applied externally to the neck and back.—Campet, who had considerable opportunities of witnessing the disease in the French colonies, appears in the last century to have employed tobacco injections with very great benefit in conjunction with wine by the mouth; and he has related several cases in which it proved successful. Attention has, however, been more recently directed to this remedy in this country by a paper in the 3d vol. of the Dublin Hospital Reports, by Mr. O’Beirne, and from some cases published in the Edinburgh Medico-Chirurgical Transactions by Dr. Anderson.” p. 163–4.

Of nineteen cases in which tobacco was employed, nine recovered. Of the ten fatal cases it must be remarked, that in one the remedy was not resorted to till the patient was dying. In two other cases it would appear that the remedy was not fairly tried. In another case there was organic disease of the brain, and in a fifth case the symptoms were always moderated after the injections, but the patient was not kept constantly under their influence. In a sixth case, of remarkable severity, the remedy was scarcely resorted to in time. In the two cases treated by Mr. Carmichael, it does not appear that the tobacco was exhibited to an extent sufficient to produce that powerful impression upon the system by which alone the spasms in the acuter forms of the disease can be combated. Of the remaining two cases the author witnessed the treatment, in the one he conceives that the exhibition of the tobacco was carried too far, and the patient being already much exhausted from the effects of the disease, it undoubtedly accelerated his death: in the other he states it to be somewhat difficult to determine how far the tobacco was beneficial or otherwise. The patient was evidently not kept constantly under its influence, although the spasms were several times relaxed after its exhibition; and if, when first resorted to, it had been increased in proportion to its effects, the patient, being very carefully watched, Mr. C. is inclined to believe that the spasms might have been subdued. “Large doses certainly should not be employed at first, but as it appears that the repeated use of tobacco generally renders the system less susceptible to its influence, in nearly all instances it will afterwards be necessary to increase the quantity.” Mr. Travers has given his testimony strongly in favour of the remedy.

“I conceive, remarks Mr. C., that more has now been advanced in proof of the efficacy of tobacco than can be adduced in favour of any other remedy yet resorted to. I have not, indeed, succeeded in finding a single case, in which, being fully and fairly tried before the powers of the constitution had given way, it has been known to fail. Many more cases have been cured by the use of opium, and for the obvious reason, that a far larger number have been treated with it. Tobacco is a more certain and potent sedative than opium, the latter being a remedy that can never be relied on, having failed far oftener than it has cured. * * * I would not say that tobacco is a remedy, which, even resorted to at

an early period, and employed with judgment, will always avail;—for I believe, that in its worst forms, tetanus is a disease of too destructive a nature to be arrested by any treatment whatever. But I hold it to be the best remedy that we at present possess, and one which will generally be found capable of diminishing the severity of the acute disease, and often of subduing it altogether.” p. 177–8.

During the use of the tobacco the patient must be supported by a nourishing diet, tonics, wine, and other stimulants. The carbonate of ammonia in particular is well adapted to counteract the extreme prostration sometimes induced. At first a scruple of the tobacco leaf, infused in eight ounces of water, will be enough for an injection, which must afterwards be increased in strength in proportion to its effects. A stronger infusion will be necessary for those who are accustomed to the use of tobacco as a luxury. Unless in chronic tetanus, baths impregnated with the plant are not only insufficient, but objectionable.

Antimony has sometimes been employed for the relief of tetanus. Of ten cases in which it was resorted to, six were fatal, but in these the disease was very acute. The remedy is best adapted for the more chronic forms of the disease. It is objectionable when the muscles of the larynx are affected, as the nausea and sickness it produces add to the patient's distress, and are liable to produce paroxysms.

Cold affusion.—To produce the sedative influence to which the efficacy of cold affusion must be ascribed, the water should be at a temperature but little above the freezing point, poured in a continuous stream and from a considerable height. Employed in this way it produces the utmost prostration, and it may be carried to the extent of causing fatal syncope. A less powerful impression may be made by suddenly dashing water on the body of the patient, or by plunging him in a cold bath. The primary effect of cold affusion is often a severe and sudden exacerbation of the spasms, which sometimes proves fatal. It must be acknowledged that the evidence in favour of cold affusion chiefly refers to cases of the idiopathic form of tetanus, in which it has been extensively employed by Dr. Wright, Dr. Cochrane, and other practitioners. The author cannot, however, agree with Mr. S. Cooper, that it presents no hope of benefit in cases of tetanus arising from wounds. It has been shewn that cold is eminently adapted to fulfil the most important indication in the treatment, the production of a sudden and powerful sedative impression; and it will be found that in most of those traumatic cases where it fails, this impression is not effectually made. Dr. Wright has recorded two traumatic cases which were cured by the use of the cold bath; and Sir Benjamin Brodie is reported to have found cold affusion of more service than any other remedy he has employed. Of twelve cases in the table in which cold affusion and other means were adopted, seven terminated favourably.

“With the exception of tobacco,” says the author, “I know of no remedy so well adapted to produce an impression on the nervous system, of power adequate to control the severe spasms of this disease, as cold affusion. I believe that even in the most aggravated cases, by boldly persevering in the application

of it until syncope or extreme depression of the vital powers is produced, the spasms may be completely removed. Unless, however, a powerful impression is made, and even kept up for some time, and the remedy repeated as soon as the spasms recur, it will prove ineffectual. 'The utmost care is necessary not to carry it so far as to take away all power of reaction, and it may be desirable to administer brandy or a diffusible stimulant during the operation. The remedy possesses this advantage, that other means, fitted to cause the same effects, may always be combined with it. Cold affusion is certainly not a remedy unattended with danger, even when judiciously exhibited; but, unless practised with boldness and perseverance, it had far better never be resorted to.' p. 184.

Three cases strikingly exemplifying the efficacy of cold affusion are related in the *Nouv. Bibliothèque Médicale* for March, 1828, by Dr. Doucet.

Warm bath.—Although no benefit whatever can be expected from the use of this remedy in the severest forms of the disease, it may be useful in promoting recovery in chronic cases, and in relieving the uneasiness and stiffness so often remaining, for some length of time after an attack of acute tetanus.

Vapour bath.—"The effects upon the system of a vapour bath at a high temperature are very similar to those of the warm bath. * * Dr. Edwards has shown, however, that there is a remarkable advantage in the vapour bath over the liquid bath, because, in the former, the air is in communication with the whole cutaneous surface, whereas, it is excluded from nearly the whole extent of the skin in the latter. If hot baths be employed, this advantage is of no slight importance, since, in order to keep the spasms under control, it will be necessary to subject patients to their influence for some length of time. But however useful they may prove in relieving the symptoms of chronic tetanus, we must by no means rely on them in the treatment of the acute form of the disease." p. 190-1.

Tonics and stimulants.—"The efficacy of tonics and stimulants in the treatment of tetanus, is supported by the testimonies of Drs. Wright, Currie, Rush, Hosack, and other practitioners. * * In that state of debility and exhaustion occasioned by the continuance of tetanic spasms, which is often greatly increased by the curative means employed, the free exhibition of tonics and stimulants becomes absolutely necessary to sustain the sinking powers of life. In the extreme prostration produced by tobacco and cold effusion, without them, these depressing remedies would frequently be almost as dangerous as the disease." p. 191-2.

Under such circumstances the author is satisfied with Mr. Travers, that too much importance cannot be attached to their employment, and that they must be regarded not only as useful, but as necessary remedies in the treatment of tetanus.

Carbonate of iron, though a tonic, is supposed to exert a specific influence over several nervous affections, and it has been strongly recommended by Dr. Elliotson as a remedy in tetanus. In three of five cases adduced by Mr. C., the exhibition of large doses of the carbonate of iron appears to have been attended with success. There is, however, he observes, no sufficient reason for considering that it exerts a specific influence over the disease. Tetanus, when occurring in individuals of a strong constitution, there is every reason to believe would wear itself out in many cases without the interference of medical treatment, and that in other instances, simply by counteracting with tonics and stimulants the debility and exhaustion consequent

upon its continuance, the spasms would slowly and gradually subside; but in severe cases the risk of suffocation is too great to justify this course of proceeding. As a tonic, the author considers the carb. ferri to be a most valuable medicine; and in chronic tetanus free from fever, or in promoting recovery from the acute form after the more severe spasms have been subdued, it may often be highly useful; but when the symptoms are urgent, to depend on a remedy that is stated to require two or three days to exert its influence cannot be viewed as a rational practice.

Hydrocyanic acid. The effects of this article, the author considers, render it obviously ill adapted to afford relief in tetanus; and the few trials that have been made of it do not seem to have been attended with much success.

The *colchicum autumnale* has been recommended as a remedy for tetanus by Dufresnoy; and Dr. Smith of the United States declares, that of four cases treated by him with the vinous tincture, three recovered.

The injection of opiates into the veins has been employed in the treatment of tetanus, the evidence in its favour is by no means, however, satisfactory.

The powerful sedative effects produced by the upas antiar and the ticunas, the author thinks might justify a trial of them, in such a formidable disease as acute tetanus.

Mr. C. thus concludes his account of the treatment of tetanus:—

“Pure acute tetanus. If the disease be traumatic, and the patient is seen at the very onset, topical means may be applicable. The medical treatment of this form, mainly consists in maintaining a free action of the bowels, in allaying the spasms with the tobacco, cold affusion or any other sedative equally effective, and in the due exhibition of tonics and stimulants. Here success, especially in cases attended with impending suffocation, chiefly depends upon the energy, perseverance, and judgment with which the necessary means are employed. No time must be lost in the trial of inactive remedies, or of such as experience has demonstrated generally to fail. From the period that the patient is first seen, he should never be left until the spasms are in a great degree relieved. * * * By the use of cold effusion, or of tobacco, they can generally be controlled. These remedies, therefore, must be vigorously employed and persevered in, until the required effects are obtained. * * Tobacco being more manageable, and if employed with sufficient care, unattended with danger, is preferable to cold affusion, which might only be used when the other remedy is unattainable.

“Acute inflammatory tetanus. The means necessary for the removal of this form of the disease are, purgatives, local and general depletion, counter irritation, mercury. As the tetanic irritation is here excited by active inflammatory action, in some part of the cerebro-spinal centre, or its membranes, the most energetic antiphlogistic measures must be pursued, until the symptoms of inflammation are subdued. Should, however, the spasms still continue, tetanic irritation remaining after its exciting cause is removed, the means recommended for the treatment of the first form, or of the third, according to the severity of the muscular contractions, must be then resorted to.

“Chronic tetanus. The following remedies may be variously resorted to, according to the particular circumstances of the case. Purgatives, opium, antimony, vapour and warm water baths, the carbonate of iron, and other tonics, electricity. If the case be attended with febrile or inflammatory symptoms, proper means must be taken to remove them. In such instances the exhibition

of opium, and other sedatives, may often be advantageously combined with antiphlogistic treatment; and it should be borne in mind, that although the spasms may be partly allayed by depletion, their complete removal does not depend upon the extent to which it is carried; and that the debility resulting from active depletion, is invariably prejudicial to ultimate recovery from tetanic irritation."—pp. 203–5.

TETANUS OR TRISMUS NASCENTIUM. "This is a variety of traumatic tetanus, occurring in children soon after birth; generally in the course of the first week, or before the ninth day, having scarcely ever been observed to supervene at a later period than a fortnight. The muscles most frequently affected are those of the lower jaw, hence the term trismus is commonly applied to this disease; but as many of the other muscles almost invariably participate, the term tetanus nascentium is more appropriate." * *

"Like other forms of tetanus, it is more frequent in warm climates, especially in the West Indies, where the disease is the cause of mortality to so great an extent that one writer (Rush) states, 'that a tenth of all the children that are born die of it.' * * As was observed of traumatic tetanus, negro children are more subject to it than white, which appears to be partly owing to the greater care taken with the latter after birth.'"—pp. 207–9.

It has been stated that this disease is only a variety of the traumatic form of tetanus; and that the injury done to the umbilical cord in its division or separation, bears the same relation to tetanus nascentium, as the primary wound to traumatic tetanus. Dr. Colles of Dublin, has attempted to show that the immediate cause of the affection is inflammation and ulceration of the umbilicus. Appearances confirmatory of this opinion he states to have occurred in all the tetanic cases which he inspected, but not in infants of the same age who had died of other diseases; the author is induced to regard these, however, as little else than the ordinary results of the natural process towards the obliteration and closure of those vessels which, after birth, become useless. This view is corroborated by the investigations of Dr. Labatt of the Dublin Lying-in Hospital, and by Dr. Thompson of Jamaica. Heustis, Campet, and others, attribute the disease to injury done to the umbilicus in dividing and dressing the cord. But the author apprehends no greater importance can be attached to an inflamed or unhealthy aspect of the umbilical parts, than to view it as sympathetic of, and indicating constitutional derangement, either from disorder in the alimentary canal, a vitiated state of the atmosphere, or other causes, a condition eminently favourable to the production of every form of tetanus.

"The following are considered the predisposing causes of tetanus nascentium;—unwholesome nutriment—irritation of the intestinal mucous membrane, from the retention of unhealthy secretions, or from acrid purgatives—an impure atmosphere—damp and cold."—p. 216.

"In the treatment of this disease the same principles should be acted upon as in the treatment of traumatic tetanus. Having cleared out the alimentary canal with castor oil, or the hydrargyrum cum cretâ, small doses of laudanum may be given—one, two, or more drops, as may appear necessary, every hour, until rest is obtained or the spasms are relaxed. Should any difficulty be experienced in the exhibition of remedies by the mouth, injections might be employed."—p. 218.

D. F. C.

BIBLIOGRAPHICAL NOTICES.

ART. XIII. *Observations on the nature and treatment of Calculous Diseases.* By BENJAMIN H. DUDLEY, M. D., Lexington, Kentucky, 1836. 8vo. pp.

This pamphlet deserves notice, as well from the high character of its author, as from the success attending his practice. Eminent practitioners render an important service to the profession by publishing the fruits of their experience, and the means employed to achieve their triumphs. Neglect of this kind is a violation of the duty which every man owes to posterity. How many bitter regrets have been expressed that *Raw*, the eminent and successful lithotomist of Holland, should have died without bequeathing to his professional brethren, an accurate description of his successful operations.

In noticing the causes of primary calculi, Dr. Dudley confirms the opinions of many European surgeons, that this disease rarely occurs in high and low latitudes. He states, for example, "that as many cases have been operated upon for stone *here* [Kentucky] in one season, as appears to have occurred in all New England in a period of twenty years. It is in temperate regions, and especially where the waters are of an impure quality, holding in solution carbonate of lime, and other mineral substances unfriendly to the healthy and vigorous action of the stomach, that it is familiarly known to all classes of society, and is acknowledged to be one of great and distressing frequency."

The causes which influence the kidneys to secrete calculous matter is still involved in much obscurity. In England it is attributed to the free use of malt liquors—in France to wine, and in this country where neither are drunk in abundance, to limestone water. It is doubtful whether the latter agent has more influence in the production of this disease, than the two former. We certainly know of many limestone districts where the inhabitants are remarkably exempt from this affection. For example, in the Great Valley of Chester county, in this state, where limestone abounds in every part of it, a case of stone is of rare occurrence. A highly respectable physician, who has been in extensive practice there for twenty years, has never seen a case of it.

The causes then which contribute to the formation of calculi, are yet to be explained. The true cause no doubt will be ultimately traced to disease or injuries to the nervous system. The sound condition of this tissue is essential to produce healthful secretions of the organs to which the nerves are distributed. This fact has been conclusively established by Wilson Phillip, so far as regards the stomach; and he adds, that in all cases of spinal irritation, the kidneys secrete an abundance of sabulous matter. We have frequently remarked this symptom of the disease, and have observed also a large quantity of this secretion follow concussion of the spinal marrow, floating in a turbid, offensive and irritating urine. There is a case recorded in Duncan's Medical Commentaries, of an enormously large calculus, taken from the bladder of a man who had some years before received a severe injury of his spine. He had no symptom of this disease previously to the injury.

We are not disposed to contradict the opinion of Dr. Dudley, that this disease is always preceded by "chronic derangement of the digestive organs," as the continued existence of it strengthens our position. Every one will admit

that neuralgia is almost invariably connected with disordered digestion. In tracing a history of calculous cases you will be informed, that the existence of the disease is preceded by pain along the course of the spine. We are aware that this symptom has been attributed to the irritation of gravel in the kidneys, but we positively know, that spinal irritation is accompanied by pain in the back, neuralgic pains shooting down the thighs, and that this disease will cause an abundant secretion of calculous matter, why not then refer the pain to the same rational source?

Dr. Dudley errs in attributing disease of the stomach to drinking lime-stone water. *Those accustomed* to this beverage are as healthy as any people in the United States, and as free from disease.

In speaking of the difference between the comparative liability of the male and female to calculus, the author remarks that "out of one hundred and thirty-five individuals who have submitted to the operation, eight only were females." He adds that Africans are remarkably exempt from this disease, five only of the above number were of that race. As the negroes constitute one fourth of the population of Kentucky, and as the relative liability of the two varieties of the human family is as five to one hundred and thirty, the opinion of Dudley on this point is perfectly correct, though this is the first time our attention has been drawn to this important fact.

In stating the conditions under which lithotomy may be performed with the best prospects of success, he cautions his readers to avoid operating in case of ulcerations or hemorrhage from the bladder—enlargement, and disease of the prostate gland. "But of all states of the organ, that wherein there is great reduction in size, with a ribbed and indurated interior, as indicated by the movement of the sound in exploring its cavity, is the least propitious to recovery. Such a disease in the bladder is independent of, although an occasional attendant upon calculus, and in all instances of its occurrence, it is found to be the most destructive in its tendency. The calculus accumulations in these cases amount to little more than a collection of sand, which the organ is incapable of expelling; while the suffering of the patient is of the most excruciating kind."

The operator very properly attaches great importance to the judicious preparation of his patients for this operation. Among the salutary means recommended, the warm bath, "added to the *free and judicious use of emetics*, repeated as they may be indicated by the deranged state of the stomach, or the febrile condition of the system, together with mercurial cathartics, as called for by the state of the liver and bowels."

In the estimation of the *solidists* of the present day, "the deranged state of the stomach" is rather an equivocal phrase. If the author mean an irritation of this organ, or unhealthy secretions in consequence of such irritation, repeated emetics would not seem to be the appropriate remedy; but as unparalleled success has resulted from this management, we scarcely feel warranted in questioning the propriety of this practice.

He recommends during the state of preparation such articles of drink and food as impose the smallest amount of labour upon the digestive organs, and communicate the least excitement to the system. In some instances, "the patient required medical attention for two or three months, to place him in a condition to justify an operation." Observation has impressed on him "the paramount importance of putting the general system of all patients requiring operations into a healthy state "in order to insure a happy issue. I am the more explicit here because I know that many surgeons pay but little attention to the medical treatment of their patients either before or after an operation, while they esteem their labour as nearly at an end when the dressings have been properly adjusted to the wound. This is indeed a very partial view of professional responsibility; and leads to consequences not less fatal to society, than humiliating

to the practitioner. The preparation for, and the treatment consequent to all critical operations is even more important than the greatest skill in the use of instruments."

All judicious surgeons will fully concur with Dr. Dudley in these sentiments, as well as in his reprobation of the practice of bleeding preparatory to the performance of important operations. Loss of blood under such circumstances renders the system more irritable—more susceptible of inflammation, and the restorative powers more feeble. It is true, that Hunter and his followers maintained an opposite doctrine, yet few of the eminent surgeons of Europe, at this time, will differ from him on this point. The justice therefore of the following declaration may well be questioned. "The efficacy," he says, "of blood-letting as a preparatory remedy in subduing the susceptibility to inflammation after operations, is relied upon by some of the most distinguished practitioners of Great Britain." Certainly A. Cooper, Lawrence, Travers, Brodie, and Hall, condemn the practice as warmly as our author.

After discussing the relative value of the several operations proposed for the removal of calculus from the bladder, the author expresses a decided preference for the lateral operation, except in cases of females. He considers "the distressing effects of the lateral operation as frequently experienced in females, consisting in a loss of the retentive power in the neck of the bladder, constitute alone an ample reason, for preferring the high operation in their case." In no other case would he recommend the high operation except where the stone is very large.

It is greatly to be regretted that the author has not minutely detailed every step of his successful operation. He omits even to mention the manner in which incision is made in the perineum—the direction of the cut through the prostate gland—whether the gorget is held horizontally, or whether it is inclined backwards as recommended by Chesselden. All that he states on this important point, is, that he "has become satisfied with the superiority of Cline's gorget, an instrument preferred to any other, and therefore recommended by Mr. Abernethy in his lectures—"that the staff is to be firmly held in a perpendicular attitude by the assistant; care being taken not to incline it either way from the centre to the perineum." He condemns the practice of causing the convexity of the staff to appear prominent in the left side of the perineum.

He remarks, "An opening more central in the perineum secures to a greater extent, the facility of using forceps in the extraction of the stone; and after the patient is placed in bed, there is an advantage in the straight-lined character of the wound from the superficies to the bladder. The neck of the bladder is equidistant from either ischium, and as there is nothing in the anatomy of the parts, which can forbid an incision to correspond with it, there should be no "hesitation about adopting this manner of operating; especially when it is known to offer greater protection to the pudic artery, and also to furnish a more direct opening for the escape of urine, whereby the patient is maintained more secure against the consequence of infiltration."

The gorget he thinks is a safer instrument than the knife, for which he gives the following reasons, which we think unanswerable.

"When a surgeon," he states, "has a piece of anatomy fairly exposed to view, upon which a certain operation is to be performed, the superiority of the scalpel cannot be rationally contested. But when the neck of the bladder and the prostate gland, the parts on which the deeper incision in lithotomy is made, are beyond the sight, nor even accessible to touch, another seems important to the successful execution of the duty of the operator, the case becomes materially changed; and if the bare remoteness from the surface of the prostate gland and neck of the bladder, those portions of the deeper seated anatomy involved in the operation, presented the only difficulty to the lithotomist, then by exactness in the movements of the hand, the gland and the neck of the bladder

might be opened, with some safety and success; but in every subject of the disease that comes upon the table, there is more or less variety in the anatomy of the parts concerned in the operation."

He adds, "the advantages of a *clean cut, with a fine edged scalpel*, are in no respect equal to the estimate made by the advocates of the practice; nor is the bruising even to laceration of the soft parts, by the use of instruments in the extraction of calculi, so much to be feared in its consequences as those are inclined to imagine, who have formed their opinions from injuries done to other parts of the system."

We agree with the author that lacerating a part does not necessarily destroy its restorative power, still it is an accident which should be avoided if possible. It occurs, however, less frequently we presume than is generally supposed. When the prostate is divided, the cellular texture yields and stretches too readily to be easily lacerated. It was the practice of Chesselden to partially divide the prostate gland with a scalpel, and then to introduce the blunt gorget which performed the double office of acting as guide for the forceps, and to stretch the parts. This operation is still performed by Mr. Brodie, of London, who, in his recent work "On diseases of the urinary organs," remarks, "Do not for an instant suppose that this is any rude or violent proceeding. It is far otherwise. The incision of the prostate having begun by the knife, the extension of it by means of the blunt gorget is accomplished with the greatest ease. If you perform the operation on the dead body in the way in which I have described, and dissect the parts afterwards, you will distinguish very readily, the clean, smooth surface made by the cut of the knife, from the fibrous, or striated surface made by the splitting of the gorget. You will ask, why not make such a division of the parts by cutting laterally with the knife? Why prefer the dilatation of the wound by the blunt gorget? My answer is, that the separation of the parts with the latter instrument causes no hæmorrhage, "and that it ceases as it reaches the margin of the prostate, that is, as soon as it reaches the condensed cellular membrane which forms what may be called its capsule."

The forceps and the calculus seem to perform the office of the blunt gorget by splitting up the prostate and stretching the cellular texture. Mr. Brodie seems to entertain this opinion. In his directions with regard to the manner of extracting the stone, he observes that, "you are to draw out the stone gradually, endeavouring to dilate the parts through which it is to pass, instead of tearing them; and it is astonishing to what an extent this gradual dilatation may be accomplished in the hands of a prudent surgeon."

Dr. Dudley bears testimony in favour of this truth, when he states, that "an incision in the neck of the bladder, from one-half to three-fourths of an inch in length, the precise extent being somewhat regulated by the nature of the urethra, and prostate gland, answered for the extraction of calculi, ranging from four to nine, and in one instance eleven inches in circumference." Though laceration, no doubt, sometimes takes place, we doubt its frequent occurrence; the yielding nature of the capsule of the prostate gland, and cellular tissue surrounding it, will generally afford sufficient space for the extraction of the stone without tearing the parts.

The dressing to the wound in the perineum should be of the simplest kind. The introduction of any foreign substance between the lips of the wound, produces more or less irritation, obstructs the flow of urine, causes distension of the bladder, and prevents union by the first intention. It seems, indeed, questionable whether the practice generally followed in this city, and long since recommended by Dr. Physick, of introducing a large gum elastic catheter through the wound into the bladder, answers any of the purposes for which it was intended. This eminent surgeon supposed it would have the effect of preventing infiltration, and would render the patient more comfortable by conduct-

ing the urine to a shallow basin, and thus keep the bed dry. Except in cases where the neck of the bladder has been improperly divided so far as to open the cellular texture around the prostate gland, infiltration rarely, if ever, occurs. In one hundred and thirty-five cases on which Dr. Dudley operated, he does not record a single instance in which this accident happened. But if infiltration were a common occurrence, the catheter would not prevent it, as the urine always escapes in greater or less quantities by the side of it. As then it cannot answer the purpose for which it was designed, and as it certainly retards the cure by preventing union by adhesion, there seems no good reason why the practice should be continued. Eminent surgeons have expressed the belief that the flow of urine over the wound does not act on it injuriously. Our author thinks it proves beneficial, by the "uninterrupted warm bath in which the parts are kept, by the presence and passage of urine, maintains them safe under all circumstances, where the general system has been attended to, and where the violence done is not such as to destroy all power of reaction." The causes of death after the operation of lithotomy arise, says our author, from "hemorrhage, mortification, or sudden sinking in consequence of the shock." The first and last is of rarer occurrence than mortification. When sloughing does supervene, it is certainly produced, for the most part, by infiltration. This accident, however, does not necessarily terminate in death, provided the case is judiciously managed. The practice of Brodie under such circumstances is so rational, and has been attended with such success, that for the benefit of the medical public, I will give an extract from his valuable work.

After describing the symptoms produced by urinal infiltration, such as chills, pain in the part, in the loins, very frequent and sometimes intermittent pulse, tympanitis, hiccough, delirium, &c., he remarks "it is important that you should not fall into the error of regarding such cases as I have just described, as cases of simple peritoneal inflammation; for the remedies which would be useful in the latter case are injurious here. The abstraction of blood, or even the operation of an active purgative, will cause the patient to sink more rapidly, tending only to hasten his death." "The proper course to be pursued is the opposite to that of depletion. The patient should take such nutriment as his stomach is capable of digesting. The bowels may be kept open by injections or some very gentle purgative; and ammonia wine, and brandy, are to be administered when the state of the general system indicates that stimulants are necessary.

"Under this kind of treatment I have certainly known two children to recover, who were affected in the manner which I have described. In one of the cases to which I allude, an abscess formed in the neighbourhood of the neck of bladder, which burst into the wound, and then the symptoms subsided. In the other a slough separated into the rectum, and fistulous communication remained afterwards between the bowel and the neck of the bladder, but it was of a small size, and productive of no serious inconvenience." The happy termination of these cases led him to the following reflections. "There is suppuration and sloughing of the cellular membrane, around the neck of the bladder, and the constitution is disturbed, as it is in a case of carbuncle; or what is still more analogous as it is in those cases in which there is sloughing of the cellular membrane of the scrotum in consequence of the effusion of urine arising from the rupture of the urethra behind a stricture. And in these cases what is the practice recommended? Do we not divide the soft parts freely over the sloughing cellular membrane; and is not this operation productive of the most signal benefit? Is it possible to resort to any practice corresponding to this, in the cases now under consideration? There is only one way in which this can be accomplished, namely, by laying the sloughing abscess open into the rectum. I made the experiment in one instance and I will tell you the result." Being satisfied from the symptoms that he was suffering from the effects of infiltration, he

states, "I introduced the fore-finger of the left hand into the rectum. I then passed a probe pointed curved bistoury into the wound, and quite to the furthest extremity on the left side of the neck of the bladder. The probe point having been felt through the tunics of the rectum, I pushed it carefully through them, and, drawing it downwards, divided the lower part of the rectum, sphincter and all. Then the wound and the rectum were laid into each other. Little or no hemorrhage followed. The relief was immediate. In five minutes after the operation, the intermissions in the pulse diminished from one in fifteen to one in fifty beats. In an hour it did not intermit at all. During the two following days the patient appeared quite well; the pulse was regular between seventy and eighty in a minute. On the next day there was a slight recurrence of the intermission of the pulse, but it subsided on the exhibition of some brandy and ammonia. After this there was a progressive improvement, and in about a month the wound in the rectum began to contract, and the urine to flow by the natural passage."

Notwithstanding the great success of Dr. Dudley, he does not seem to be very particular in the selection of his cases. "Out of one hundred and forty-five individuals afflicted with the malady who had made application for relief the operation was performed on all except ten." One of these was a gentleman eighty-two years of age, enfeebled by constant hemorrhage from the bladder—another who had pulmonary consumption, and the others so diseased as to be unable to sustain the shock of a severe operation.

Out of one hundred and thirty-five on whom Dr. Dudley operated, "four individuals failed to enjoy its benefits." One died of pleurisy, one of abscess of the kidneys, which existed before the operation was performed; the third died of inflammation of the kidneys—the fourth from disease of the liver. It is doubtful whether he lost one from the effects of the operation; certainly not more than one. He states, indeed, that "no one has ever died in my charge before the bladder was closed, or within the ordinary period required for the healing of the organ."

This success is unparalleled in the history of surgery. We have made researches with the view of establishing this point, and the following are the results.

Frere Come in one hundred cases on which he operated, lost nineteen.

After Chesselden improved his operation he lost two out of fifty-two.

Martineau lost two out of eighty-four.

In the l'Hospital de la Charité, of Paris, from 1719 to 1722, twelve hundred calculous patients were operated on, by different surgeons, of which 255 were lost.

Laucerotte, out of 1629 cases, lost 148.

Dupuytren, out of 356 cases, lost 61.

In Norwich hospital, England, out of 506 cases, lost 70.

At Leeds, out 197 cases, lost 28.

Renzi, out of 389 cases operated on, lost 60.

Souberbeille, out of 56 cases, lost 11.

M. Roux, states, that in Paris the surgeons lose one-sixth of the adults—and one in twenty of the children.

It is difficult to learn the precise results from lithotripsy, in Paris. Civiale states in his report, that of 244 on whom he operated 236 have been cured. This report, however, is said not to be honest; and in a counter report made by Larrey and Double, they assert that he lost 11 in 24. According to his statement he selected there 244 patients, from 429 who had applied to him for relief.

It gives me great pleasure to state, our townsman Dr. Randolph has operated on fifteen calculous patients with Jacobson's instrument, and has not yet lost a patient. This is indeed an enviable commencement, and we hope his future

success, will equal that of our eminent countryman, Dr. Dudley, who has triumphed over all surgeons in the skill which he has manifested in performing the lateral operation. T. H.

ART. XIV. *Anatomical, Pathological and Therapeutic Researches, upon the disease known under the name of Gastro-enteritis, Putrid, Adynamic, Ataxic or Typhoid fever, &c. compared with the most common acute diseases.* By P. Ch. A. Louis, M. D. P. &c. Translated by Henry J. Bowditch, M. D. Boston, 1836: 2 vols. 8vo. pp. 395 and 462.

Some years ago an elaborate review of Dr. Louis' work on typhus fever was published in this Journal. (Vol. IV. p. 403, et seq.) Since that time the reputation of the author has greatly increased, the excellence of his writings has been more generally appreciated, and the work on typhoid fever, which is the most perfect of them, has been extensively read. Still to most of the medical practitioners of America and the British kingdom, it has been a sealed book. It is so full of facts and of close deductions, that it demands vastly more labour of thought than the large majority of works, while it is subject to the additional disadvantage of being written in a foreign language which few thoroughly understand. This has increased the difficulty of the task, and has made a large number of physicians unwilling or unable to undertake it.

A work which cannot be read without unusual attention is always most difficult to translate. He who would undertake it must be entirely familiar with the language, must have studied the work most thoroughly, and if possible should be personally acquainted with the author and his method of teaching. Dr. Bowditch possesses all these requisites, and to them he has added an intense love for truth and a personal attachment to Dr. Louis, which increased his desire of giving the profession in America a faithful translation of one of the most valuable works on medicine that has appeared for some years. Every page of the translation proves that he has examined most scrupulously those words or sentences which might have been erroneously translated, from their analogy with English expressions of different meaning. Where the French words were without an exact synonyme in the English language he has either indicated the word which corresponded most nearly with the original, or he has given both the original and the best English translation.

The language of the translation is much better than is usual in works of this kind, and less strongly tinctured with those French idioms which disfigure most of our translations. Still it was not possible to avoid some expressions which are scarcely English. This difficulty arises in great part from the greater zeal displayed by the French in the cultivation of pathological anatomy. This pursuit has obliged them to adopt many new words which become necessary in expressing the same ideas in the English language. All that a translator can do is to confine his language as strictly as possible to his native idiom, but when he is forced to depart from it we should not be hypercritical.

This notice is designed to introduce the excellent translation of Dr. Bowditch to our readers. It is not our intention to review the original work, but we cannot let so favourable an opportunity pass without recalling to the minds of our readers a few of the most important facts observed by Dr. Louis. The work on typhoid fever, relates to that slow, protracted form of disease known under the term typhus mitior or nervous fever, or by the modern appellation of dothinen-teritis. Dr. Louis observed the symptoms, pathological phenomena and other facts presented by the patients admitted into two wards of La Charité during a period of six or seven years. After analyzing the symptoms of all the cases of

acute diseases, he selected typhoid fever as the basis, described it with great accuracy and then compared the phenomena presented by this disease with those peculiar to other acute affections. By this method of investigation the reader enjoys the advantage of studying the history of all acute diseases in a single work of the most condensed form, at the same time that he can thoroughly learn the characteristic symptoms of the principal malady.

But those who will read this translation of Dr. Louis's work must remember that it must be carefully and laboriously studied, it cannot be carelessly read. It is too full of facts and written in too concise a style for superficial examination, and he who would dismiss it hastily may be assured that he will often totally mistake the strict meaning of the author.

Some confusion will arise in the minds of many readers from the title of the work. Dr. Louis merely gives the numerous designations applied to one disease in order to show that he is indifferent or nearly indifferent to the name. But we must carefully distinguish the nervous fever or typhus mitior of the French from the typhus fever of the English writers. The two diseases differ materially, and though readily distinguished in well defined cases are often confounded with each other. For a more complete account of the distinction between them, we may take the liberty of referring the reader to the *American Journal* for February 1837.

Dr. Bowditch has published in the appendix to the first volume some interesting observations on the mucous membranes of the alimentary canal. We hope he will continue his inquiries, which will probably lead to interesting results. His observations fully confirm the opinion of Dr. Carswell which refers the softening of the great tuberosity of the stomach to the action of the acid contents of this organ upon its coats.

W. W. G.

ART. XV. *A Treatise on the Functional and Organic Diseases of the Uterus.*

From the French of F. DUPARCQUE, Docteur en Medecine de la Faculté et ancien interne des Hôpitaux et Hospices Civil de Paris, &c. Translated, with notes, by JOSEPH WARRINGTON, M. D. Philadelphia: Desilver, Thomas & Co., 1837. 8vo. pp. 455.

The work of Dr. Duparcque, like most modern French monographs, is highly elaborate; we may add, not entirely exempt from the great faults of French writers, unnecessary extension, tedious detail, and long and useless illustrations. That it possesses, however, great merit, may be inferred from the fact that it obtained the prize proposed by the Medical Society of Bordeaux for the best treatise on the subjects which it embraces.

It is divided into *two parts*. The first contains a general pathological view of the organic diseases of the uterus, their causes, mode of formation, development, termination, and the means of discovering them.

After a brief notice of the physiological action of the uterus, the author enters into a consideration of the various causes of common occurrence which interrupt its proper physiological actions and otherwise produce an abnormal condition. His remarks appear in the main to be just, and many of them original. The various points advanced in these discussions are illustrated by well described cases.

The *second part* is on particular organic alterations of the uterus, as simple engorgement, sanguine engorgement or congestion, hard engorgement, scirrhous inflammation, simple ulceration, and confirmed cancer. All these conditions are described, and their causes, mode of formation and terminations, properly explained. According to the observations of the author they may

follow each other consecutively; and hence he insists, with proper emphasis, on the importance of removing the first manifestations of disease, and of avoiding the various exciting causes of congestion and inflammation as the only sure method of avoiding cancer: or, in other words, he maintains that cancers very commonly result from the neglect of proper remedial means while in their simple or primary state. Like the first part of the work, the second is also enriched with numerous cases illustrative of the views of the author.

Of the *translation* we have little to say. The task of translating the *ideas* of an author into a different language from that in which they are written, is always laborious, and often profitless to him who undertakes it; and hence we feel grateful to those who furnish us with a valuable foreign author in an English dress. In the present instance, the meaning of the author, generally speaking, is rendered with tolerable clearness. That the translation abounds too much in Gallicisms, is undeniable. Sometimes, indeed, it is too literal to be altogether intelligible. These, perhaps, are the unavoidable errors of a young writer in his first essay. But errors in grammar ought undoubtedly to be guarded against, such as the use of the relative *which* instead of *who*, when applied to persons; *became* for *become*, and the *substantive* form of the noun in place of the *adjective* derived from it, as *scirrhus* for *scirrhus*, and vice versa. The table of "*Errata*," which contains *two* examples, might have been very profitably extended from the typographical errors which occur throughout the work. As the book, however, is a truly valuable one, we hope it will soon reach a second edition, in which, no doubt, the translator will be careful to correct the errors to which we have adverted.

R. M. H.

ART. XVI. *Mémoire sur les rapports des sexes dans les naissances de l'espèce humaine*; Par Ch. GIROU DE BUZAREINGUES, Correspondant de l'Académie royale des sciences. Paris, 1836.

Memoir on the proportion of the sexes at birth in the human species. By Ch. Girou de Buzareingues, &c. &c. Paris, 1836.

In the year 1828, the author of the memoir above mentioned, read before the Royal Academy of Sciences of France an essay upon Generation, in which he set forth the following views in relation to the difference in the proportions of the sexes at birth in the human species.

The male sex is the result of the predominance of the motive power (*force motrice*) of the animal economy. In France, the variations in the proportions of the sexes at birth, maintain a relation with the proportion of ease to labour,—abundance to want,—refinement to rusticity,—manufacturing pursuits or of those which chiefly call for the exertion of the intellectual faculties to rural occupations or to those which demand the exertion of physical force,—libertine and dissolute manners to those of strictness and austerity,—the influence exerted by city life compared with that of the country, or, in a word, of the sensitive to the physical power.

In the treatise upon Generation, from which these conclusions are drawn, the author specially designates the influences exerted by the relative conditions of the parents as to age, health, temperament and strength, both physical and moral, together with various other considerations connected with the employments of industry, as influencing one or the other sex.

In his subsequent publications upon the same subjects, the author has substituted for the expression sensitive force or power, used in opposition to motive power, the term nutritive power, as more particularly characterizing the female sex. In the present memoir which was communicated to the Royal

Academy of Sciences, he considers himself authorized to deduce the following conclusions as the result of laborious investigation.

"Every thing which tends to increase the muscular power of one sex, and particularly that of the male, but more especially that of both sexes, favours the procreation of males. Every thing on the contrary, which tends to lessen the muscular power, favours the procreation of females."

"Whatever tends to increase exclusively either the motive or nutritive power in one or the other sex, reduces the relative influence of the other force in the other sex."

"Every kind of power is increased by gradual, moderate, and prolonged exertion, and becomes exhausted by excess. Thus, institutions which maintain a discipline similar to that of the ancient Roman armies, tend to develop the muscular energies of a people, and secondarily also contribute to increase the relative number of male births; whilst, on the contrary, habits which serve to enervate the muscular strength render the lymph predominant over the venous blood, or the cellular tissue over the fibrous, and determine to the relative increase of female births."

For the support of his positions, the author lays down certain rules which have to be borne in mind by those concerned in the investigation of the subject. Among these are the following:—

No deduction should be drawn, in regard to a cause tending to the procreation of one sex, before ascertaining whether it is not associated with causes favouring the procreation of the other sex; for the capabilities of the father may be neutralized by those of the mother, and even in the same individual, the opposition of causes may prevent or diminish the effects.

The actual condition of a nation should not be judged of by its former state, since the conditions not only of individuals but of nations, alter with the age. During the increasing prosperity of a nation, the relative proportion of the sexes may not be the same as in the period of its decreasing prosperity.

The activity of industry is determined by the wants; but it frequently happens that the products exceed the wants, and then industry reposes to be roused again in turn.

In this alternation, the number and precocity of the marriages, and the proportions of the two vital powers do not remain constant.

The amount of labour performed in a state, must not be estimated from that of some one of its provinces.

If there be places where the manufacturing industry exacts a larger amount of the physical power than the rural employments, it should also exert a greater influence upon the procreation of the male sex.

The author is sustained in his general conclusions, so far as France is concerned, by the facts, that in those departments which contain the largest cities, the relative proportions of girls at birth rises above the general average for the whole nation, both in the legitimate and illegitimate births. This result exhibits itself conspicuously in Paris, especially in those quarters in which wealth most invites to repose. The following statements, made from official reports, of all the births during ten or twelve years, shows the influences manifested in some of the principal cities of France. The term placed on the right, exhibits the proportion of female births corresponding to 1000 males. It must be observed that the excess of males over the females at birth throughout the whole kingdom, is as 1000 of the former to 938 of the latter, the difference amounting to about 6.6 per cent.

In Lyons, the births from 1823 to 1832, were
in the proportion of

	Males	24,586	} 978
	Females	24,050	
Marseilles, from 1820 to 1832, (12 years,)	Males	27,278	} 962
	Females	26,262	
Bordeaux, from 1820 to 1832, (12 years,)	Males	21,827	} 977
	Girls	21,294	

Rouen, from 1820 to 1833, (13 years,)	Males	21,484	} 960
	Girls	20,627	
Nantes, from 1820 to 1832, (12 years,)	Males	14,371	} 953
	Females	13,700	
Lille, from 1823, 24, 26, to 32, (9 years,)	Males	11,439	} 978
	Females	11,086	
Montpellier, from 1822 to 1833, (11 years,)	Males	7,095	} 832
	Females	6,835	

The proportion estimated for Paris is 967 females to 1000 males.

The author has given the following results obtained by him from authentic documents, relating to the proportions of the sexes at birth in other parts of Europe.

At Strasbourg the proportion of females is 978 to 1000 males.

Orleans (in 1826), the female births were as 1058 to 1000 males.

Moulins, from 1823 to 1827 990 " "

Department du Nord, in 1827, 937, in 1829, 939.

Metz, from 1700 to 1810, 110 years, 961.

In Paris, from 1745 to 1788, inclusive, the proportion among the legitimate births was 960, and of the illegitimate 972; from 1789 to 1805, both the legitimate and illegitimate 956; from 1806 to 1816, legitimate 958, natural 975; from 1817 to 1827, legitimate 964, illegitimate 967. The proportion of female births was less during the republic than before or since.

At Geneva, in the years 10, 11, and 12 of the republic, 999.

In the Department of Lemman during the same period, 921.

In Florence, from 1451 to 1550, (100 years,) 950; from 1551 to 1650, 962; from 1651 to 1750, 966; from 1751 to 1800, (60 years) 988; for the 360 years, 965.

City of Genoa, 1806, 7, 8, 10, 11,—953.

Department of Genoa during the same period, 915.

Department of Pô, from the year 12 to 1813 (10 years,) 928. In this department the rural predominates greatly over the manufacturing industry.

Naples, in 1824, 976. In 1826, 979.

Kingdom of the two Sicilies from 1821 to 1828, 8 years, 942.

Rome, in 1823, 980; in 1824, 977; 1828, 902. From Easter in 1829 to Easter in 1830, 10005.

At Leghorn, from 1818 to 1824, (7 years,) 971.

Plaisance, in 1823, 1045.

Vicenza, in 1820, 978.

Milan, in 1828, 959. In the other communes of the province of Milan in the same year, 908.

In the whole of Lombardy during the same year, 929.*

Barcelona, in 1821, 962.

Patriarchate of Lisbon, in 1801, 959.

Bishopric of Oporto, in 1801, 974.

Province of Minho, in which Oporto is situated, and in which the rich valley of Minho is highly cultivated, in 1801, 902.

Province of Alemtejo, of which only 2-9ths are cultivated annually, and only 1-9th in wheat, in 1801, 978.

Kingdom of Portugal, in 1801, 956.

London, in 1826, 28, and 30, 996.

* With the exception of Russia, there is no part of Europe where the male sex predominates so much at birth over the females, as in Lombardy and Denmark. Nor are there any states in which the rural employments predominate so much over the manufacturing industry. The proportions of the sexes are, for the communes of the province of Milan, 908; Denmark, 910; Russia 906 to 918.

Great Britain, 1801, 11, and 21, 954.

Sweden, 956.

St. Petersburg, in 1828, 994; in 1832, 956.

Moscow, in 1824, 948.

Russia, in 1812 to 1822, (10 years,) 906; in 1827, 898, according to M. Ferussac; from 1812 to 1827, and 1829, 918, according to M. Bickers. Whilst Russia thus presents the maximum proportion of males to females, Sweden offers the minimum. The author has pointed out the different conditions of the inhabitants of these countries, which conspire to create the disparity.

Vienna, from 1801 to 1829, 964.

Inspruck, in 1827, 1000.

City and territory of Trieste, in 1825, 1014.

Austrian dominions, from 1787 to 1791, (4 years, incomplete,) 942.

Berlin, in 1827, 950.

Kingdom of the low countries, from 1815 to 1828, in the cities 948; country, 939.

Kingdom of Prussia, from 1820 to 1827 (8 years,) 944.

Cologne with Dentz, in 1827, 1021. Government of Cologne and Dentz, in 1827, 963. In the last mentioned government the rural population bears the smallest proportion to that of the cities of any other portion of the Prussian monarchy.

Kingdom of Denmark, in 1828, 910. City of Copenhagen, 937.

Munich, 1828, 29, 971.

Hamburgh, 1822, 1020.

Stuttgart, from 1815 to 1828, (14 years,) 1000.

Kingdom of Wurtemberg, from 1820 to 1828, (9 years,) 946.

Cape of Good Hope, from 1812 to 1820, (9 years,) among the christians 1026; slaves, 959, according to M. Ferussac.*

It is a singular fact that in the illegitimate births the predominance of the males is in a much less proportion than with the illegitimate births.

The *Annuaire* for 1833 gives the results of observations made upon more than thirteen millions and a half of births in France, (from 1817 to 1830,) of which 6,981,902 were boys, and 6,563,567 girls. The relative proportions of the sexes at birth thus stand as 17 males to 16 females.

When, however, the natural births are taken separately, the proportion of the sexes is changed. Thus, during the period of 14 years just mentioned, the illegitimate births amounted to 487,021 boys, and 466,119 girls, which makes the predominance of the males considerably less, or as 23 males to 22 females.

Another striking fact grows out of the separate observation of the illegitimate births; namely, that those which take place in the lying-in hospitals present a much larger proportion of males than those of the births occurring at private residences. The memoir under consideration states the proportion of the sexes in natural births occurring between 1817 and 1826, inclusive, to be as 1000 males to 957 females in the hospitals, and as 1000 males to 977 females at private residences. This result is supported by the official returns made by all the principal towns in France. Our author informs us that the observation holds good not only when the sum total of many years are included, but in the

* In the United States, the only estimates yet made which present on a large scale the relative proportions of the sexes at birth, are reported in this Journal for Nov. 1831, article Medical Statistics. From this we find that the births in Philadelphia for 10 years, show a predominance rather exceeding 7 per cent. In the new states, the excess of males at birth is still greater. In Alabama, Illinois, Missouri, Mississippi, and Indiana, all of which are but lately settled, the boys of 10 years of age exceed the girls of the same age as 100 to 92. Now, as under that age the deaths of males always much exceed those of females, the predominance of the males at birth, must exceed that exhibited at the 10th year.

estimate for each particular year, in Paris and all the large cities, as may be seen from the following returns of natural births:

In Paris, in 1827, births at residences, 986; in hospitals, 938.

1828,	do.	979;	do.	940.
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1829,	do.	945;	do.	917.
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1830,	do.	982;	do.	944.
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1831,	do.	939;	do.	928.
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Lyons, from 1823 to 1832, (9 years,) at residences, 1019; in hospitals, 944.

Marseilles, from 1820 to 1832, (12 years,) at residences, 991; in hospitals, 891.

Rouen, from 1820 to 1833, (13 years,) at residences, 984; in hospitals, 903.

Nantes, from 1820 to 1832, (12 years,) at residences, 1016; in hospitals, 824.

It is not a little curious to find that among the legitimate births the results last considered are reversed; namely, the births at private residences exhibit a larger relative proportion of males than those in the hospitals. This fact is strikingly presented in the following statements of legitimate births:

At Paris, in 1827, at home, 983; in hospitals, 1164.

1828,	do.	956;	do.	996.
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1829,	do.	952;	do.	1004.
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1830,	do.	978;	do.	985.
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1831,	do.	960;	do.	1084.
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1832,	do.	943;	do.	745.
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Lyons, from 1823 to 1832, (9 years,) at residences, 959; in hospitals, 1062.

Marseilles, from 1820 to 1832, (12 years,) at residences, 958; in hospitals, 980.

Rouen, from 1820 to 1833, (13 years,) at residences, 960; in hospitals, 972.

Nantes, from 1820 to 1832, (12 years,) at residences, 946; in hospitals, 949.

Our author attempts to explain the curious facts last mentioned, by observing that the mothers of the illegitimate children born in hospitals, come for the most part from the country, whilst those who lye-in at their homes, appertain almost exclusively to the native city population, to which also belong the mothers of the legitimate children who lye-in at the hospitals, the indigence of whom may perhaps be referred to intemperance or idleness, causes tending to increase the procreation of females.

Our author's conclusions have in many instances been called in question; but he has exhibited much ingenuity in their defence, and generally succeeded in designating the modifying causes which occasionally interfere to alter general results and create exceptions and incongruities. In his concluding remarks he recapitulates his doctrine, in doing which he states that anatomy and physiology teach us, that the fibrous tissue predominates in the male, and the cellular in the female; that the blood which is the vehicle of fibrin, prevails in the male organs of reproduction, and the lymph in those of the female, &c.

He observes that numerous observations made upon domestic animals, and the human species, have proved to him that all the circumstances which render the muscular powers predominant during the intercourse of the sexes, are followed by a predominance of males in the offspring; whilst on the contrary, all those under which this force languishes, are followed by an opposite result. Statistical documents embracing more than 80 millions of births attest, that under the influences of laborious employments, the number of male births increase, whilst under the influence of ease and luxury the proportion of males is diminished.

G. E.

ART. XVII. *Das der Gebrauch innerer Reizmittel zur Beförderung der Geburt des Kindes unnöthig, fruchtlos und gesunden Frauen Sogar Schädlich Sei; nachgewiesen.* Von Dr. JOHANN CHRISTIAN GOTTFRIED JÖRG, Königl. Sachs. Hofrathe; Ordentlichen Professor der Geburtshülfe an der Universität zu Leipzig, &c. &c. 8vo. pp. 86. Zeitz, 1833.

That the Administration of Internal Stimulants, with the View of hastening the Delivery of the Child, is unnecessary, useless, and in the healthy female, injurious. Demonstrated by Dr. JOHANN CHRIST. GOTTF. JÖRG, Professor of Midwifery in the University of Leipzig, &c. &c.

This small brochure was addressed to Professor Kühn of Leipzig, on the occasion of the celebration of his jubilee, in 1833—an honour, which it is the custom, in Germany, to extend to distinguished medical men, when they have spent fifty years in the practice of their profession. The title of the work sufficiently expresses its range, and Dr. Jörg has handled the subjects embraced in it, with an ability clearly indicative of profound judgment, and extensive experience in his profession. There are one or two of his conclusions in which we do not concur; yet we must do him the justice to say, that he has shown in strong colours the impropriety and mischief of a very common practice. Accoucheurs are too much in the habit of resorting to the internal administration of stimulating remedies, with the object of hastening labour.

Whether this practice is the offspring of a distrust in the powers of nature, or a culpable impatience of the delay sometimes encountered in the parturient process, its consequences, there is too much reason to fear, are often destructive both to mother and child.

Professor Jörg has treated his subject in three chapters. In the first he attempts to prove, that the natural parturient powers, when they pursue their regular course, require no assistance from internal remedies. In the second he demonstrates, that it is impossible to aid or accelerate the natural delivery of the child, by the administration of remedies which are harmless. And in the third he endeavours to show that it is hazardous to administer stimulating articles during the course of a natural labour.

We have neither space nor inclination to follow the author through all his arguments upon these questions; but shall confine ourselves to a few passing remarks in relation to some of the articles usually employed for the purpose under consideration. These he divides into three classes: 1. General stimulants affecting the whole vascular system. 2. Medicines influencing the uterus through the urinary organs; and 3. Such as act upon the alimentary canal, and have the impression excited by them communicated to the uterine system.

We do not deem it necessary to enumerate the several articles arranged under these respective heads. Upon the subject of ergot, however, the author has entered upon some details, which it may be interesting to notice, especially as the powers of the article are still very differently estimated, and as Dr. Jörg is amongst those who do not believe that it operates specifically upon the uterus.

With the view of testing the virtues of ergot, Jörg, and several students under his observation, made numerous experiments upon themselves. They took from a scruple to two drachms in powder, at eight o'clock in the morning, after a light breakfast of coffee and bread and butter. In small doses it produced no sensible effect; but when two drachms were taken, they experienced a sense of fulness and weight about the stomach, nausea, tenderness, an inclination to vomit, and a general feeling of disgust, which did not subside until about two o'clock. In no individual of the experimenters was actual vomiting induced. The article was also used in decoction and infusion. In these forms it was found to be highly unpleasant to the stomach, and could not be repeated in

large doses, for any length of time, without irritating the bowels, producing loss of appetite, and general impairment of the digestive function.

Four persons of from 21 to 30 years of age, took each two full cups of an infusion of an ounce of ergot, in a pound and a quarter of water, after a light breakfast of coffee: no perceptible effect was produced. On the 28th of July, six persons took, each, three cups of an infusion of two ounces of ergot in two pounds of boiling water. Of this number, three experienced in two hours, increased heat in the abdomen, especially about the stomach, tenderness of the epigastric region, nausea, and an inclination to vomit. These feelings subsided in a short time, and all three individuals dined with a good appetite. In the other three, the only impression produced was, a feeling of warmth and irritation about the stomach.

On the 4th of August five individuals took, each, two drachms of pounded ergot, sprinkled on bread and butter. In an hour one experienced considerable painful irritation in the region of the stomach, some affection of the head, a feeling of faintness, slight cerebral congestion, increased heat, and redness of the eyes. These symptoms were shortly followed by an evacuation from the bowels, and some time afterwards, by dryness of the palate and fever, periodical pain of the abdomen and repeated irritation. At twelve o'clock he experienced slight nausea, a free secretion of ropy saliva, increasing disposition to vomit, flatulency, and half an hour later, considerable borborygmus, increased pain of the bowels, continued nausea and disturbance of the head. At 1 o'clock a watery discharge took place from the rectum, attended with some griping; and at 2 o'clock, after partaking of dinner, all the symptoms, except some thirst, and occasional pains of the bowels, subsided.

In the second individual, the first effect of the article was to excite a sense of heat in the stomach, dryness of the mouth, increased secretion of saliva, repeated eructations, and slight nausea. This condition continued until 11 o'clock, when slight vomiting took place, and at half-past eleven the remains of all that had been swallowed were ejected, together with considerable mucus—the nausea then abated, but the eructations and the flow of saliva continued until the afternoon. Anorexia, a sense of dejection, and weakness of the limbs were experienced throughout the remainder of the day.

The third, an hour after swallowing the ergot, complained of some sickness and oppression, the secretion of saliva was increased, and, in a short time, he experienced pain of the bowels and head. The symptoms, however, were mitigated by the horizontal posture in bed, by taking some coffee, and by a walk in the open air. The pain and sickness, nevertheless, continued with considerable intensity until 2 o'clock, and did not subside until after dinner, which was taken without appetite. About 8 o'clock, a watery discharge took place from the bowels, which was followed by the disappearance of all the uneasiness.

The fourth individual felt, half an hour after he had swallowed the ergot, as though he had not taken food for several days. By 11 o'clock the feeling of hunger was so urgent, that food was taken with a relish. In a quarter of an hour afterwards, nausea came on, with increased salivary secretion, pain of the abdomen, and, shortly, vomiting, which recurred in five minutes, attended merely with the discharge of mucus, the sickness and pain of the abdomen continued until five in the evening, at which period a smart chill took place, followed by profuse perspiration. After this all the unpleasant sensations subsided.

In the fifth individual, a sense of heat about the stomach, pain of the abdomen, increased heat of the skin, flushing of the face, and frequency of the pulse took place at 10 o'clock. At half past ten there was heaviness and pain of the head, with a sense of dryness and burning in the mouth and throat. In half an hour these symptoms were followed by a copious flow of saliva, and in half an hour the individual felt an increase of pain in the abdomen, loathing of food, and at

11 an inclination to vomit. The pain of the bowels became so intense, that it was difficult to maintain the upright posture and it was necessary to remain drawn up in bed. The inclination to vomit recurred almost constantly, but emesis did not take place until it was mechanically induced by irritating the fauces. From 11 to 12 the discomfort of the experimenter was almost insupportable; but after that period, a rumbling of the bowels took place, followed by the discharge of considerable flatus, and a liquid offensive stool, subsequent to which considerable relief was experienced. At 3 o'clock a cup of coffee removed the remains of the nausea, and by evening all the unpleasant feelings had subsided.

On the 11th of August, four individuals took each a drachm of ergot sprinkled on bread and butter, a fifth took two drachms. The same symptoms nearly, were developed as in the preceding instances.

Professor Jörg also reports several experiments made with this article on dogs, cats, horses, cocks, and pigeons, showing that in large doses it occasions death, which was preceded by evidences of considerable pain, and by convulsions. A drachm and a half, repeated for several days, was found sufficient to kill pigeons, and also a common rooster. A young cat was destroyed by two drachms, repeated in the same way; a dog by an ounce and a half, and a second dog by an ounce.

From these results our author concludes that ergot is incapable of exercising any direct influence upon the uterus, and when the contractions of this organ are excited by its administration, it is in consequence of the decided impression it makes upon the alimentary canal, and especially its tendency to excite vomiting, which, when induced by any of the ordinary emetics, is liable to excite contractions of the uterine fibres. In reference to emetics our author remarks, that in cases of threatened abortion or miscarriage, he has found small doses of ipecacuanha, given so as to excite slight nausea, but never to the extent of inducing vomiting, one of the most effectual means of suspending uterine contraction, and thereby saving the ovum.

In regard to our author's opinion of the powers of ergot we can only say, that our own experience has led us to estimate them very differently. We feel convinced, that we have seen, in several instances, positive evidence of its property of acting directly upon the uterine fibre, and we are inclined to suspect that those who have failed to realise this effect, have used an inferior article. As, however, there are still many who are sceptical on the subject, further observations are necessary to decide the question.

E. G.

ART. XVIII. *An Essay on the Origin and Nature of Tuberculous and Cancerous diseases.* Read to the Medical Section of the British Association, on the 23d of August, 1836. By RICHARD CARMICHAEL, M. R. I. A., &c. Dublin, 1831, pp. 56.

This is a most interesting question, and one, the solution of which, may lead to important practical results. But whether the treatise before us is written in such a spirit as to facilitate the removal of the obscurity still hanging over the origin of tubercles, it seems to us, at least, to be doubtful. The question could only be resolved in a satisfactory manner by the most minute researches into the pathological anatomy of tubercles, and we are obliged to admit that the opinion of our author differs widely from that of the most accurate modern pathologists.

Mr. Carmichael returns to the opinion formerly broached, that tubercles are beings possessing a vitality independent of the animal in which they are lodged, except so far as that that animal affords them; 1st, the organic particles of which they are formed; and 2nd, the nutriment which they imbibe by their own innate

powers, and thus they form the last link in the chain of the last class of animals, the entozoa.

The author is evidently not very familiar with all the appearances of tuberculous disease, for although he quotes Laennec, Carswell, and other pathologists, he draws his inferences almost exclusively from one form of tubercle; the rounded isolated tubercle, which is certainly the most frequent, but not the only variety of this morbid product. Now although the rounded granulations and tubercles found in the lungs and still more distinctly observed in the serous membranes, do certainly present many analogies of form and mode of development with some of the lower classes of parasitic animals, we must inquire into the history of other forms of tuberculous matter. A minute study of the pathological anatomy of tubercles will then show (as we have verified in some hundred examinations) that in children, the most common form of tubercle is the infiltration of the tissue of an organ with the tuberculous matter. After a time it becomes an irregular amorphous mass of the usual opaque yellow colour. We have examined the same matter in adults, and in them also we have watched the gradual progress of a lung or of a lymphatic gland from the first stage, in which it is still soft, though filled with a semi-concrete transparent or yellowish fluid, infiltrating its whole structure as water does a sponge. In a more advanced degree the tissue of the lung is obliterated, and a tuberculous mass remains. Now, we certainly do no more admit the distinct vitality of this form of tubercle than we do that of the serous liquid of dropsy.

Scrofula is not of a tuberculous character, according to Mr. Carmichael. He uses the term in too wide a signification. The writers who contend for the identity of tubercle and scrofula, allude only to those cases of chronic alterations of the glands or other tissues, in which distinct tuberculous substance can be detected. But the term scrofula is frequently applied to other alterations of a much less decided character.

Cancer is supposed, and we believe with reason, by Dr. Carmichael, to be closely connected with tubercle. But what is that connexion? Ingenious as the essay certainly is, we fear that this question is left in the same doubt as that relative to the origin of tuberculous disease.

W. W. G.

ART. XIX. *De Blepharoplastice. Dissertatio Inauguralis, Medico-Chirurgica.*
Auctor JOANNES STAUB. 8vo. pp. 100. Berlin, 1835.

De Blepharoplastice, that is to say, according to the etymology of the term, (from *Βλεφαρον*, eyelid, and *πλαστική*, formation); a dissertation on the formation of eyelids; not their physiological organization, but rather the remedying of their original and accidental defects by the skill of the surgeon. The satire of Butler has rendered almost every one aware of the operation first proposed by the Italian physician Tagliacozzi, and now, with certain modification actually pursued, for the restoration of deficient and dilapidated noses, and denominated by writers rhinoplastice. Although we are not aware that any surgeon has actually succeeded in supplying, by a similar operation, either a congenital absence or accidental loss of the eyelids, yet there are sufficient facts upon record to show that very extensive deformities of these organs, arising from numerous causes, may be effectually remedied by the knife, and the serious injury which the eye itself would eventually have sustained, had they been allowed to remain, prevented. Besides other deformities to which the eyelids are occasionally subject, it not unfrequently happens that they adhere to each other from birth, or become subsequently agglutinated from injuries or disease, thus preventing the eyes from being unclosed, or they may adhere to a greater or less extent to the ball of the eye; both eversion and inversion of the lids or of their tarsi are also of common occurrence, and even, though less frequently, the lids may be so de-

ficient in length as not to cover completely the ball of the eye, or finally, they may be either entirely wanting or destroyed. Now, as already hinted, in all such cases the surgeon has it in his power by appropriate, and often very simple operations, to remove entirely, or to a very considerable extent, the existing deformity, and thus to guard the organ of vision against its deleterious consequence—even to preserve the sight itself. It is of these operations that the author of the dissertation before us treats under the denomination of Blepharoplastice.

The work is divided into eight sections, devoted respectively to the operations for

- 1st. Colombonia, or a preternatural longitudinal division of the eyelids.
- 2nd. Ankyloblepharon, or abnormal adhesion of the lids to each other.
- 3d. Symblepharon, or abnormal adhesion of the lids to the ball of the eye.
- 4th. Trichiasis, or inversion of the eyelashes.
- 5th. Organic Entropium, or inversion of the lids.
- 6th. Organic Ectropium, or eversion of the lids.
- 7th. Lagophthalmia, or defect in the length of the eyelids; and,
- 8th. Deficiency of the eyelids.

Under each of these sections the operations recommended and pursued by the most distinguished surgeons and oculists, are minutely and very accurately described; as, however, the author presents nothing new or peculiarly interesting in relation to either of these, a more extended notice of his dissertation is not considered necessary. From any of the standard treatises upon operative surgery, all the practical information it comprises may be readily obtained.

D. F. C.

ART. XX. *De Septi Narium Restitutione. Dissertatio Medico-Chirurgica.*

Auctor CAROLUS TAX. Berlin, 1836: pp. 43, 4to.

A Medico-Chirurgical Dissertation on the restoration of the Septum Narium. By CHARLES TAX.

The principal object of the author in the present dissertation is to describe the various surgical operations, with their rationale, which have been proposed by different distinguished surgeons for the restoration of the septum between the nostrils, when this has been destroyed by accident or disease.

The more recent authorities cited in favour of the operation here described are Carpue, Dieffenback, Graefe, Blassus, Rust, Fricke and Labat. The remarks of other surgeons of eminence in regard to them are, however, occasionally referred to.

The dissertation is divided into nineteen sections. The first ten are occupied with an account of the manner of forming the septum narium, when the whole of the nose is to be restored, by a surgical operation, according to the methods pursued in India, in Italy, and in Germany. The eleventh to the nineteenth section inclusive, treat of the manner of restoring the septum narium when it alone has been destroyed: 1st, from the skin of the forehead; 2ndly, from the skin covering the nose itself; 3dly, from the superior lip; 4thly, from the skin of the lip and cheek; 5thly, when a hare-lip exists; and 6thly, from the skin of the palm of the hand.

It is not of course expected that we should, in the present notice of the work of M. Tax, attempt to give to our readers the details of these several operations and the remarks of the author in relation to them respectively. The principles upon which the whole of them are founded, as well as their general outlines, are well understood by every intelligent surgeon. To render in any degree intelligible an account of the proper manner of performing each, and to explain the particular cases to which it is adapted, would render it necessary for us to translate nearly the whole of the dissertation before us.

D. F. C.

ART. XXI. *Illustrations of Pulmonary Consumption, its anatomical characters, causes, symptoms, and treatment, to which are added some remarks on the climate of the United States, the West Indies, &c., with thirteen plates drawn and coloured from nature.* Second Edition. By SAMUEL GEORGE MORTON, M. D., late Physician to the Almshouse Infirmary. Philadelphia, 1837.—pp. 349. 8vo.

The rapid sale of the first edition of this work, which appeared three years since, proves the estimation in which it was held by the profession, and its success has induced the author to publish a second edition. We mention this fact with the more pleasure, on account of its rarity and the strong proof it affords of the sterling excellence of the work. That a work intended for the public, or as a text book for large classes of students, should pass quickly to a second edition, is not uncommon. But that a monograph devoted to those details of pathology which interest the scientific physician, but are scarcely appreciated by the student, should be so extensively read, must be highly gratifying to the author. Nor are there many books more instructive to the practitioner remote from the usual sources of medical knowledge.

We shall quote the words of the author to show what changes have been made in this second edition. "The whole work has been re-written and the quantity of matter (exclusive of the numbered cases which remain nearly as before) is considerably more than double. Within the period above mentioned I have also enjoyed the advantage of personal observation of the climate of some of the West India islands. The result of my inquiries on this head are recorded in the following pages, and will be found, I trust, to embrace some useful information."

The first edition having been reviewed at some length in a preceding number of this Journal, (Feb. 1834,) and an analysis given of its contents, we shall now notice those parts merely which are of recent addition.

Dr. Morton has very judiciously incorporated into his work the observations of Dr. Lombard of Geneva, relative to the influence of particular professions and modes of life on the developement of tubercles. These results confirm the commonly received notions that sedentary occupations and a constrained posture which impedes the flow of blood through the lungs and heart, favour the growth of tubercles in those persons who are already predisposed to the disease, and give rise to this predisposition in persons of a previously healthy constitution. As to the exciting causes, there is more diversity of opinion. Dr. Morton considers bronchitis and pneumonia as not very infrequent causes of consumption, while simple pleurisy is considered by him as the result, not the cause of tubercles. Now, we have certainly seen not a few cases of consumption in which bronchitis, pneumonia, and pleurisy, acted as exciting causes, or at least were the initial points from which the patients dated the beginning of their symptoms. In those cases, extreme care was taken in verifying the statement of the patient by repeated inquiry, and we are very sure that no disturbance of the health had previously existed in a sufficient degree to attract the attention of the patients, or to prevent them from following their usual occupations.

Such cases do not, however, invalidate the general rule, that pulmonary consumption in the large majority of patients begins gradually, and as it were, imperceptibly. The patient is not at first attentive to his own sensations, and is awakened to a knowledge of his danger, only when a secondary inflammation supervenes and disables him from pursuing his ordinary vocations. We believe, then, that phthisis is, in the large majority of patients, a strictly constitutional disease, but that ordinary inflammation of any of the pulmonary tissues may excite the developement of tubercles in certain individuals. But we are

not sure whether the local inflammations produce this result, because they are seated in the lungs, or whether they merely act by debilitating the general health, and by keeping up a long continued febrile excitement. It is in this latter way that typhoid fever is so frequent an exciting cause of tuberculous consumption. Whenever any of these febrile diseases produce this effect, the subsequent consumption is usually of a rapid character, approaching in some respects to the "galloping" or acute phthisis. This variety is usually more to be dreaded than any other, and can rarely be alleviated by remedial means, although it sometimes is cured. In no case is it tractable, unless the severe hectic which attends it can be checked.

The author has not written a complete treatise on pulmonary consumption, he has only given us such *illustrations* of the disease, as seemed to him most important. If the title of the work had been of a more ambitious character, we should have required a more complete account of the earliest stages of the tuberculous disease, and more ample details relative to its diagnosis. For it must be admitted that the very earliest stage of the consumption is the most interesting to the practitioner, as he then has the greatest chance of arresting its progress. The diagnosis is at that period chiefly derived from the rational signs. The use of the physical means of exploration at the forming stage is to show that the disease has not advanced so far as to affect a considerable portion of the pulmonary tissue. In other words, that the consumption is not so far advanced as to present a large deposit of tubercles—that it is not yet confirmed. It is necessary to bear this distinction in mind, else the physical signs may become sources of error and even mislead the physician. If he hastily declares the lungs to be sound, he may do serious mischief to the patient, and must always cast a certain share of discredit upon the most precious means of investigation which we possess.

In the views of treatment, given by the author, we for the most part coincide. The treatment of phthisis should always be borne in mind, and by judicious counsel we may hope to arrest or to mitigate the worst cases. There is something to be done in every stage; if we cannot cure the disease of the lungs, we may check the diarrhoea, moderate the sweats; allay the cough, and remove the pleuritic pains which so constantly torment the sufferer. It is our duty not to abandon the case, hopeless as it may be in the latter stages; we should call to mind the sage and humane advice of Bacon, and when we cannot save the patient, let us diminish the pains of death. There are not many diseases in which judicious treatment can do so much positive good, although there are few in which cures are more rare. The physician must graduate his treatment to the periods of the consumption; but if he is judicious and abstains from too active remedies, no evil but much good will result from his aid. The medicinal part of the treatment is chiefly adapted to the removal of certain symptoms, but though it is not primarily directed to the cure of the principal lesion, its influence upon it is often very effective. Consumption rarely pursues its course with equal rapidity; at one time the secretion of tuberculous matter is abundant, at another it apparently ceases. If the secondary fever, or other symptoms, which exhaust the patient, be for a time arrested, the curative action of nature is less impeded. The tubercles may be absorbed, or converted into cretaceous masses, or the cavities may become indolent, and the patient may then resort, with a fair hope of success, to the hygienic treatment. Hence, if we watch symptoms as they arise, and prevent them from harassing the patient, we prepare the way for future attempts which may be made to check the formation of new tubercles.

The success from the use of iodine and other remedies, supposed to act directly, in preventing the growth of tubercles, has not been very great. They have apparently been useful in some cases of the disease, but their action is of so uncertain a nature, and can be appreciated with so much difficulty, that like

the treatment with the homœopathic remedies, it is doubtful whether the disease is not merely pursuing its natural course.

The author is, with reason, more sanguine in his hopes of success from a change of air, exercise, the abandonment of unhealthy employments, and above all, from change of climate. This last is most useful when the patient continues to travel, instead of remaining quietly in a dull town, where idleness and ennui contribute to increase the pernicious effects which often result from indifferent lodgings and a scanty possession of the comforts of life. The West India islands are much resorted to by invalids from the United States. These islands unite many advantages; a mild winter climate, variety of scenery, constant opportunities for varying the mode of travelling by sea or land, and in general, they offer comfortable accommodations. Dr. Morton visited several of the islands in the winter of 1834, and has given us such information respecting them as fully shows the great advantage which invalids may derive from a visit to them. If the patient desires to remain stationary, Santa Cruz appears to offer more inducements than the other islands. For ample details on this subject, we cannot do better than refer to the work itself.

W. W. G.

ART. XXII. *Ueber die Harnblasenspalte, nebst Beschreibung und abbildung einiger beim Mænnlichen und Weiblichen Geschlechte Beachteten fælle.* Von PETER SCHMITT, Doctor der Medicin und Chirurgie. 4to pp. 18., Würzburg, 1836.

On congenital deficiency of the Urinary Bladder, with a description and delineation of some cases of this species of malformation in the male and female subject. By P. SCHMITT, M. D.

Cases occasionally occur of a very peculiar malformation of the urinary bladder, in which the whole of the anterior part of the organ is wanting, and the mucous surface of its posterior parietes presents externally, being continuous with the skin of the abdomen; consequently the cavity of the urinary bladder does not exist, and the orifices of the ureters open upon the surface of the abdomen in the neighbourhood of the pubis. This state of things is generally accompanied with a deficiency in the bony basin anteriorly, and with some deformity of the organs of generation, more apparent in the male than in the female.

This congenital malformation has been denominated by different medical writers congenital inversion of the urinary bladder; congenital prolapsus with inversion of the urinary bladder; congenital deficiency of the anterior parietes of the urinary bladder; congenital *extrophia* or extroversion of the urinary bladder, or absence of the urinary bladder.

The most common form of it is thus described in the work before us. Immediately after birth there is observed, in the neighbourhood of the symphysis pubis, a depression of about the size of a nut, surrounded by a sharp edge formed by the external skin of the abdomen. The depression is covered with a pale red membrane resembling the mucous tissue. On either side of this depression is felt the end of the os pubis, the bone being deficient in front, with the inner edge of the rectus femoris muscle widely separated from that of its fellow, passing upwards. By the active contractions of the diaphragm in respiration, and especially by the violent crying of the child, the bottom of the depression becomes gradually raised, and finally this part is changed into an oval tumour having some resemblance to a hernia. It is acutely sensible, and in consequence of the irritation of the air, as well as from its being kept constantly wet by the urine which trickles over it, it assumes a red, spongy appearance, and increases by degrees in size, so that in an individual of from

twelve to eighteen years of age, it is nearly of the diameter of a large apple. The navel is found immediately above this tumour. The upper portion assumes gradually the appearance of a smooth cicatrix, while the remainder of the tumour is red, of a very peculiar appearance, and in spots covered with a kind of fungous protuberances. On each side of the lower portion of the tumour two spongy prominences may be observed, which are the orifices of the ureters; from these escape constantly, at short intervals, large drops of a strong alkalescent urine. These flow more freely when the patient assumes an upright position or after he has partaken freely of fluids.

In males, there is observed, immediately below the tumour a penis, which is seldom beyond two inches in length; along its upper surface runs a flat, smooth, grooved line, with a mucous membrane, and terminating upon the dorsum of a tolerably large glans. This groove is the remains of the urethra. In the centre of the glans, where the orifice of the urethra should be, there is merely a shallow depression. On its sides and under part, the glans is covered with the usual reflection of integuments forming the prepuce with its frenum. On either side of the penis is a swelling which will be found on examination to be one half the scrotum, containing a testicle. In females, beneath the tumour and on each side are found the labiæ pudendæ, the nymphæ, with the clitoris in the centre. The orifice of the urethra exists within the depression answering to the vagina.

Other particulars relating to this particular malformation are given in the treatise before us, with a notice of certain peculiarities connected with individual cases, which it is not necessary here to notice.

In the third section of the treatise is presented a catalogue of the several instances of congenital deficiency of the urinary bladder, recorded by different writers, with a reference to the works in which an account of them is contained.

The fourth section contains the history of three cases communicated to the author by professor Jäger.

The fifth section describes the anatomical characters of the malformation as it occurred in different cases; while the sixth, and last, which we here translate entire, considers its causes and treatment.

"The destruction of the anterior parietes of the urinary bladder, in connexion with the separation from each other of the ossa pubis, and of the recti and pyramidales muscles of the abdomen was formerly erroneously considered to be the cause of the prolapsus and eversion of its posterior parietes. As Meckel and Himly have very fully set forth their respective opinions in regard to the true cause of this malformation, which is unquestionably to be referred to an arrest in the process of developement in the fœtus, it is not necessary here to enter at length into an examination of the subject.

"The proposition to destroy the spongy tumour by caustics (Earle) or by the ligature, is to be entirely rejected. The attempt to cause its cicatrization by the application of astringent salves, and fomentations, or by touching it with caustic, has, in general, entirely failed. In the *Dictionnaire des Sciences Médicales* a surgeon proposes to insert into the orifices of the ureters silver or elastic catheters, the external ends of which are connected with a small reservoir sustained by bandages. In children this plan cannot be adopted, as it is productive of too much pain and irritation. It will often also be inefficient, from the circumstance of the ureters opening externally by numerous small orifices. In the generality of cases the best machine for avoiding the discomfort attending this malformation according to Bonn, is one formed like a bowl terminating below in a flask provided with a stopper."

D. F. C.

ART. XXIII. *A Treatise on the Chemical, Medical, and Physiological properties of Kreosote, illustrated by experiments on the lower animals, &c. &c.* By JOHN ROSE CORMACK, Member of the Roy. Med. and Roy. Phys. Soc. of Edinburgh. Edinburgh, 1836, p. 211 and 134.

Various articles in the Journal de Pharmacie. Vide the Nos. for January, 1833, p. 27; October, 1833, p. 544; June, 1834, p. 362; February, 1836, p. 89, &c. &c.

For several years past the dry distillation of organic substances has engaged the attention and excited the interest of European chemists. This process consists in subjecting them, when deprived of moisture, to a high temperature. By this means the elementary principles of the body are acted on; they enter into new combinations, so that the products are the result of its destruction or decomposition by heat. Before the temperature is very much elevated, carbonic acid gas is given off, followed by carbonic oxide, water, acetic and other acids, and lastly come the oily and less volatile parts. If the substance contain any nitrogen, part of it unites with some of the hydrogen to form ammonia, and some may also combine with part of the carbon and produce cyanogen. After a certain period these compounds cease to be generated, and there remains a quantity of carbon uncombined with any other substance, which no increase of heat will volatilize.

In 1830, M. Reichenbach, a chemist of Blansko, while engaged in the investigation of this curious and interesting subject, discovered kreosote and five other substances, all of more or less value in medicine and the arts, and all products of the destructive distillation of vegetable matter. The names of the other bodies are eupione, capnomor, paraffine, picamar and pittacal. These important discoveries were announced to the scientific world in M. Schweigger-Seidel's Journal for 1830.

Eupione derives its name from the Greek, *εὐ*, *very*, and *πῖον*, *greasy*. It is an oily substance, destitute of taste, colour and odour; it is the lightest known liquid, having a specific gravity of only .655. It probably contains less carbon than paraffine, but differs in no other respect from that substance. Eupione exists more abundantly in the animal than in the vegetable tars, and is obtained most readily by distilling the tar of bones.

Paraffine is so called from its remarkable dissimilarity (*parum* and *affinis*) to all other substances. Professor Christison of Edinburgh discovered about the same time with M. Reichenbach, and read an account of it in 1831 to the Royal Society of Edinburgh. He called it petroline, because he first obtained it from petroleum; but it has generally retained the name of paraffine given to it by its first discoverer.

Capnomor is a constituent part of smoke, and hence it derives its name; *καπνός*, smoke, and *μοῖρα*, part. This substance possesses an agreeable but not very strong odour, somewhat resembling ginger.

Picamar is the bitter principle of tar "*in pice amarum*." It is a thick, oily, colourless liquid, with a peculiar but not disagreeable odour.

Pittacal (from *πίττα*, pitch, and *καλός*, beautiful,) is of a fine blue colour, and may be fixed as a dye. It contains nitrogen, and seems to belong to the same class of substances as indigo; like that body, when rubbed, it acquires a metallic lustre. It is insipid, inodorous, not volatile, and almost insoluble in water. No other chemist but Reichenbach has obtained this substance.

Kreosote, however, is by far the most important of all the products of destructive distillation, both on account of its chemical properties and its numerous practical applications. It was first discovered by Reichenbach in impure pyro-

ligneous acid, and afterwards in all the tars. Its name is derived from κρεας, flesh, and σωζω, I save.

It is an oily fluid, transparent, and when pure, perfectly colourless; its odour is very similar to that imparted to meat by wood smoke, varying, however, according to the species of tar used in its manufacture. It possesses a burning taste, followed by sweetness; its specific gravity is 1037, and boils at 397 F. It is readily combustible in the atmosphere, and burns with much smoke. When dropped on paper it leaves a stain, which soon disappears, and more speedily if a gentle heat be applied. Kreosote unites with water in two different proportions; one of the combinations being a solution of one part of kreosote in four hundred parts of water, the other a solution of ten parts of water in one hundred of kreosote. Ether, alcohol, eupione, carburet of sulphur, oil of petroleum, naphtha, and acetic acid combine with it in all proportions. It also forms a number of interesting compounds with both acids and alkalies.

The most important chemical property of Kreosote is its power of coagulating albumen, as on this no doubt depends its powerful antiseptic virtue. J. R. Cormack, Esq. of Edinburgh, in his valuable treatise on this article remarks that the action which takes place when albumen is coagulated is not exactly ascertained, but may be explained according to the hypothesis of Fourcroy by supposing that oxygen gas is absorbed. One principal reason for believing that the antiseptic property of kreosote depends upon its coagulating albumen is, that albumen does not putrify when coagulated. This property of kreosote has been applied to a great variety of useful practical purposes: and among others, it is stated in a memoir by M. Martin Solon, read before the Academy of Medicine at Paris, to be particularly valuable for the preservation of anatomical preparations.

It has also been successfully applied to the preservation of fresh meats, and hence may become an important article in domestic economy. The meats intended to be prepared should be immersed in a solution of one part of kreosote in a hundred of water: here they should remain from twelve to forty-eight hours, according to their size, when they are to be dried either in the sun or before the fire, and afterwards set aside for six or eight days, at the end of which period they will be found to have acquired the consistence, appearance, smell and taste of the finest smoked meat.

As already stated, kreosote is probably the most efficient substance yet discovered for the preservation of dead bodies of whatever kind. Birds poisoned with it resist putrefaction for a great length of time, and the bodies of animals may be *mummified*, so as to keep them sound for an indefinite period, by immersing them in a solution of kreosote in water, or by injecting a mixture containing kreosote into the blood-vessels, and the embalmment may be rendered more complete by filling the cavities of the cranium, thorax and abdomen with the same solution.

And indeed from recent investigations, it has been ascertained beyond a doubt that the tarry and resinous substances from which kreosote is chiefly manufactured, were the very articles used by the ancient Egyptians in the process of embalming, and by means of which their mummies have been handed down to after ages—mementoes of the skill and science of that gifted people, as imperishable and as wonderful as the Pyramids themselves. It is stated in the Asiatic Journal for February 1836, that Lieut. Col. M. E. Bagnol presented to the Royal Asiatic Society a human hand and a piece of beef, preserved by means of a preparation of vegetable tar found on the borders of the Red Sea, in the vicinity of Mocha. The Bedouin Arabs, with whom he conversed on this subject, were of the opinion that this vegetable tar, called in their language Kattran, was the article chiefly depended on by the ancient Egyptians in the process of embalming. They also believed that large quantities of camphor, myrrh, aloes and frankincense were used, but these are evidently not essential as the

tar alone penetrates and discolours the bone. The only use now made of this tar is as a plaster or ointment for the sore backs of horses and camels, rot in sheep, and lastly, in the preparation of the heads of criminals sent from the distant provinces to the seat of government. The tar is obtained from the branches of a small tree or shrub, which is found in most parts of Syria and Arabia Felix.

The process by which Kreosote is procured is complex and difficult: that of Reichenbach has been simplified and improved by other chemists. The following is the mode recommended in the "*Annales de chimie et de Physique*" of July 1835, by M. Koene. The tar derived from pit coal, is distilled in a retort provided with a long tube, having a large mouth. Under this is placed a receiver. The oil which comes over first swims on water, and it is necessary to remove from time to time the products of the distillation, till an oil is obtained which sinks in water. When this is found to be the case, the product is collected. The heavy oil obtained during the distillation condenses not only in the receiver, but also in the tube of the retort, where it unites with the naphthaline forming a buttery substance. By applying a gentle heat, the mass will drop into the receiver. The product is now allowed to remain in a cool place for some hours, after which it is pressed. The expressed naphthaline still contains oil, which is separated by heating it with its own weight of acetic acid till it melts. After allowing it to cool, the crystallized naphtha is pressed; and the acid adhering to the kreosote is saturated with sub-carbonate of potash. The kreosote is now to be shaken for a quarter of an hour with phosphoric acid, the proportions being half an ounce of the acid to twenty ounces of the oil. The mixture ought then to be agitated with its volume of water, and afterwards distilled with a graduated heat, care being taken to separate the oil which floats on the surface. The rectified oil is now to be dissolved in its own volume of a hot solution of caustic potash of the specific gravity 1120. When it has been allowed to cool for half an hour, the supernatant oil is again removed, and the heavy oil again treated with the caustic potash, only a fourth part, however, of the solution being this time employed.

On uniting the solutions of potash, a slight excess of diluted phosphoric acid is added, and the free kreosote which floats on the surface is separated. It is again rectified; and the first product, which is chiefly water being rejected, the kreosote comes over quite pure.

The mummified flesh of dead bodies has at various periods been prescribed for a number of diseases, similar to those for which kreosote is now used. It has been employed from the earliest ages. Avicenna recommends it in cutaneous diseases, fractures, abscesses, contusions, nausea, dyspepsia, hemoptoe, ulcerated lungs, palpitation of the heart, &c. It was at one time in great vogue in England and France, and is mentioned in most of the old works on the *Materia Medica*. Lord Bacon highly extols its power in arresting hemorrhage.

Mummy is even now, according to Madden, often prescribed by Arabian physicians. They mix it in powder with butter so as to form an ointment called *mantej*. It is used particularly for ulcers, and is considered an excellent remedy for them.

Pettigreu states that mummy fell into disrepute, not from any change of opinion respecting its virtues, but from the disgust excited on account of the mode in which it was prepared. It was discovered that the European market was supplied entirely by a company of Jews, who prepared a species of mummy in Egypt with the common bitumen of the country, and that they made use of the bodies of criminals, of those who died of the plague, and indeed of any subjects they could procure.

The Persian Ambassador presented Louis XIV. with two golden boxes filled with this precious substance. The following account is given of the presentation speech. "L'Ambassadeur de Perse dit à Louis XIV. que le baume momié étoit un spécifique pour les fractures des os, et généralement pour toutes les

blessures; qu'il étoit employé pour les maladies et ulcères tant internes qu'externes: en un mot qu'il avoit la propriété de faire sortir le fer qui pouvoit être dans les blessures."

Kreosote has now been a sufficient length of time before the public, to enable us to ascertain pretty certainly and accurately its real value as a remedial agent. We can calculate the deductions to be made from the extravagant commendations of its discoverer and early friends; and the allowances for the scoffs and gibes of that class of medical practitioners, who never admit that new articles of the *materia medica* can possibly have any merit or efficacy.

Reichenbach among his first experiments applied the kreosote to slight *scalds*, in which he found it eminently beneficial. Suppuration was arrested and the sores healed rapidly. In the treatment of *burns*, it has been employed in France by Berthelot and Goupil (*Bulletin Général de Therapeutique*, Feb. 1834.) They state that it has a remarkable tendency to cause the sores to cicatrize, from the circumference to the centre, and thus prevent those irregular contractions, which in so many instances produce permanent disfigurement; a crust in the first instance forms on the injured surface which spontaneously separates in a few days. In this, as in most cases of the application of kreosote, suppuration is prevented from taking place, or if it has commenced, this diseased action is arrested. This article, therefore, seems particularly adapted to burns as it prevents the two worst consequences of these accidents, viz: extensive suppuration and the contraction of the cicatrices. In our own practice the kreosote has answered in burns better than any other application.

Reichenbach records two cases of *caries* cured by the application of lotions of kreosote and water. Reports from other surgeons, however, are less favourable.

M. Frémanger recommends the following ointment for this purpose: ℞. simple cerate, oil of sweet almonds, of each ℥i.; kreosote, 30 minims—mix.

There is scarcely any disease, in which, according to the concurrent opinion of numerous physicians, kreosote has proved more beneficial than in that torturing and obstinate affection, *tooth-ache*. It has been employed on the continent for the relief of tooth-ache ever since its discovery; and for the last two years it has been prescribed very extensively in Edinburgh, and according to Dr. Cormack with very great success. We have used it repeatedly in our own practice, and although it has occasionally failed, we have no hesitation in pronouncing it superior to any remedy in common use.

According to Dr. C., and our own observation confirms the correctness of the remark, unless there be a cavity in the tooth through which the kreosote can be applied to the nerve, as a *general* rule (to this, however, there are exceptions,) no advantage will be derived from it. Where the pain is merely rheumatic, without the tooth being at all carious, a solution of kreosote in water is highly useful, relieving more speedily, certainly, and for a longer time than any other remedy.* Dr. Cormack, in the treatise already quoted, remarks that he tried it in his own person with a carious tooth, with complete success. He introduced it undiluted into the cavity, and as soon as the transient pain caused by its irritating character had subsided, he was perfectly relieved. Before this, he was generally attacked every damp day with pain, and had repeatedly tried many of the ordinary remedies without benefit. He did not now suffer a twinge for several months; the pain then returned, when a second application of the remedy was again successful, since which he has remained perfectly well.

Various explanations of the *modus operandi* of kreosote in these cases, have been offered, but none seem entirely satisfactory.

*Frémanger recommends the following wash, as being eminently useful in irritation of the gums. ℞. distilled water ℥ij. pure kreosote four drops—mix.

1st. It has been supposed that the remedy produced its effect by destroying the nerve: to this it has been objected that if the nerve were destroyed, the pain would never return, whereas in most cases of relief from the use of kreosote, the pain returns after a considerable lapse of time. But the destruction of the nerve, it may be rejoined, may be partial only, sufficient to paralyse its sensibility for a while, but not sufficient to prevent a return of this sensibility.

2nd. The kreosote may unite chemically with the albumen of the fluids, which are always exuding from the cavity of a carious tooth, and thus form a crust to protect the nervous pulp from the irritating action of the atmosphere.

3d. It may perhaps afford relief by stimulating the loaded vessels of the nerve, causing them to contract and expel the blood with which they are surcharged.

The practitioner should be careful to cleanse the cavity thoroughly before employing the kreosote: the best mode of introducing it, probably, is by means of a camel's hair pencil. After this has been done, the cavity should be filled with cotton saturated with pure kreosote, care being taken, if possible, to prevent any adhering drops from touching and irritating the adjacent soft parts. If this accident should happen, however, the pain is but momentary and is not attended with any serious consequences.

Kreosote undoubtedly possesses in an eminent degree the power of *arresting hemorrhage* from the capillaries; yet its usefulness in this respect is considerably diminished on account of its tendency to prevent union by the first intention, as it can with difficulty be employed where this result is desirable.

Dr. Hoering of Neustadt, has experimented on living animals for the purpose of ascertaining its styptic properties.* He found that the bleeding from large arteries and veins was arrested by the application of a dossil of lint soaked in a solution of kreosote. Dr. Bichthauer, of Kungelsan, found it very efficient in arresting bleeding from a leech bite, which was very profuse, and had resisted various other modes of treatment, and under which the patient was rapidly sinking.

Dr. Elliottson has published several interesting cases of *cutaneous diseases*, in which the kreosote has effected a cure after various other means had been tried in vain. Professor Wolf, of Berlin, cured in eight weeks, a case of *impetigo sparsa* of twenty-five years standing, with fomentations of kreosote and water. We have ourselves frequently used it in cutaneous diseases, and with great advantage, both internally and externally in the form of ointment as well as lotion.

It is also highly recommended in *chilblains*. Dr. Hahn, of Stuttgart, says that whether they be ulcerated or not, he accomplishes a cure in the course of a few days with fomentations of the solution of kreosote in water. Dr. Cormack prefers equal parts of kreosote and almond oil. In a case of two or three years' standing occurring in our practice, the itching and inflammation were promptly relieved by washing the parts in a weak solution of kreosote.

Ulcers of various kinds, but particularly those of a scrofulous, aphthous, phagedenic or venereal character, are readily cured by kreosote. Dr. Shortt of the Royal Infirmary of Edinburgh, used it successfully in an extensive scrofulous ulcer of the hip, which had resisted a great variety of treatment: it at last yielded to kreosote and was ultimately entirely cicatrized. In aphthous ulceration, it is also highly recommended. The following formula of Magendie was used with complete and speedy success in a very bad case of this kind. Kreosote half a drachm, gum arabic one ounce and a half, camphor mixture ten ounces and a half, mix and use it as a wash every two hours.

The recommendations in favour of its employment in chronic venereal ulcers of the most obstinate character, are very strong. M. Lessère (*Bulletin Gène-*

*Gazette Medicale de Paris, Dec., 1834.

ral de Therapeutique) has published the following striking case of this description. On the 10th of September, 1833, a patient came to consult him under the following circumstances: on the uvula, velum palati and left tonsil were deep seated ulcers, of a livid colour, with abrupt edges. The neighbouring tissues were in a state of violent inflammation, and he experienced great pain in deglutition. During the month of December, the inflammation was subdued by antiphlogistic measures, and the ulcers were touched from time to time with nitrate of silver. The ulceration still continued its ravages, destroying the uvula, velum palati and the affected tonsil. Diluent drinks, sarsaparilla, extract of parsley root, and lastly eighty mercurial pills with opium were given: but they only served to aggravate the pain. During this treatment, the ulcers neither increased nor showed any inclination to heal. In the beginning of March the water of kreosote was applied six or eight times to the ulcerated surface by means of a pledget of lint, and in fifteen days the cicatrization was completed.

Several cautions should be borne in mind by the practitioner in the application of kreosote to ulcers. It is of great importance in regulating the strength of the solution, to remember that water dissolves only one-eightieth part of its weight of kreosote. If a small excess of kreosote be present, it will not fall to the bottom, but will float on the surface in the form of minute globules: and of course when the lint or brush is dipped in the solution, these globules will adhere, and thus a much stronger preparation than was intended will be used. It is sometimes advisable to apply pure kreosote to ulcers; but this is not generally the case; it always produces more or less irritation, and if it be applied at all in this way, it is better to wait after each application till this disagreeable effect has entirely disappeared.

It is proper to apply this article more frequently in the beginning of the treatment than afterwards, and when the ulcer assumes a healthy appearance it may be discontinued entirely. Various modes of application have been used; in solution, by means of a pledget of lint, or camel's hair pencil—in the form of ointment—or on the surface of an emollient poultice. Dr. Shortt has occasionally employed the following formula:—Take of kreosote, ten drops; vinegar, two drachms; water two ounces—mix.

Kreosote very effectually corrects the *factor of ulcers* and other acrimonious discharges; but whether it is better for this purpose than the chlorides, I am not able to state. It has been tried in diseases of the eye, in gonorrhœa, and in cancerous affections; but generally with very little benefit. M. Breschet, however, reported one case of cancer to the Academy of Medicine, which was greatly relieved by it; while in other instances it was entirely inert.

Of all the beneficial effects of kreosote, there is none probably more important than its power of *allaying the irritability of the stomach*, and of controlling the most obstinate cases of nausea and vomiting, arising from nervous excitability, without any organic disease of that organ. Its power in affections of this character, remarks Dr. Cormack, exceeds all other known remedies. This application of kreosote was accidentally discovered by Dr. Elliottson, from observing that in cholera it stopped the vomiting, although the other symptoms still continued, and the case hurried on to a rapidly fatal termination. Dr. E. says, he never knew it to fail in arresting vomiting, proceeding from functional derangement merely. (See this Journal for May, 1836, p. 152.) Drs. Shortt and A. T. Thompson of London, concur in this statement.

Dr. E. also prescribed it with great advantage in a case of vomiting from arsenic; and several times successfully for that obstinate and distressing malady, "sea sickness."

A short time since, the writer of this article had an opportunity of testing its efficacy in a most violent and long-continued instance of nausea and vomiting in a parturient woman. This difficulty commenced at about the sixth week of

pregnancy, and had resisted a great variety of treatment for several weeks, till she was reduced to the lowest stage of weakness and depression. Carbonate of soda, calcined magnesia, effervescing powders, enemata, gentle purgatives, every variety of diet, ice, opium, &c. &c. had all been tried in vain, or with only slight and temporary benefit. Upon learning the course that had been pursued with her, I immediately recommended the kreosote, and was most agreeably surprised at seeing the complaint promptly and entirely yield to its efficacy. She was ordered one drop in a little sweetened mucilage every two hours: in one day after commencing this treatment she was considerably better; and on the third the vomiting wholly ceased; and she has now enjoyed for more than two months as good health as females in her situation generally do. H. L.

ART. XXIV. *Dissertation on the question, how far are the external means of exploring the condition of the internal Organs to be considered useful and important in Medical practice.* By ROBERT W. HAXALL, M. D., of Richmond, Va.—pp. 108.

Our readers may not be aware that the Boylston prize of fifty dollars is annually awarded at Boston to the best essay on a subject named by the committee the preceding year. The subject of the prize for 1836, was the utility of physical signs in the exploration of the diseases of the thorax and abdomen. The prize, strictly so called, was awarded to Dr. Holmes, of Boston, but the essay furnished by Dr. Haxall, and the one by Bell, were so excellent, that two other prizes were awarded at the special request of the committee.

The style of Dr. Haxall's dissertation is clear and simple, and perfectly suited to his subject. The memoir is necessarily short, and cannot therefore offer a minute account of all the physical signs connected with the diseases of the chest and abdomen, but it is sufficiently detailed for a fair and lucid exposition of their utility. The author writes like one who has entered into the spirit of his subject and has made himself familiar with the physical signs by that practical attention which can alone avail the practitioner. It is not sufficient to have read the works on auscultation, nor is it enough to have acquired a knowledge of the most prominent signs. No physician can really make the art available for purposes of diagnosis, unless he knows it familiarly. If he possess that acquaintance he may combine the physical with the rational signs of disease in such a way as to render the diagnosis of most affections, and especially those of the chest, vastly more certain than it could be if the ordinary symptoms were alone depended upon. Dr. Haxall has enumerated the various signs, but instead of confining himself to a mere description, he has stated the diseases to which each sign is chiefly applicable, and has entered more fully than has been usual in most treatises of the kind into the diagnosis of abdominal affections, including typhoid fever. He has given to this portion of his subject nearly its full developement, and has shown that the physician should never forget to examine the abdomen, in cases of suspected disease, by the touch and percussion. The author has well described the lesions of the thoracic organs and the physical signs corresponding to them. He is remarkably correct in the description, and although the subject is not carried to its full extent, enough is said to show that no single means of diagnosis is nearly as useful to the physician as the physical signs. There the greatest utility consists in the practitioner's application of the knowledge they furnish.

W. W. G.

ART. XXV. *Periodico de la Academica de Medicina de Méjico.* Nos. 1 to 8, inclusive. Mexico, 1836-7.
Journal of the Academy of Medicine of Mexico.

We have been furnished through the politeness of the respectable editor of the above Journal, Dr. L. Blaquiere, with all the numbers up to February of the present year. It is issued monthly in numbers of about thirty-two pages, octavo. The contents of those already published, present a very favourable specimen of the zeal and industry with which the different branches of medical science are cultivated by our southern neighbours.

In general, each number comprises, 1st. Original communications; and 2ndly. Extracts and notices, principally from the foreign journals. Among the first are many able and interesting observations; indeed the work throughout confers no little honour upon its editor, and it will be found, we are persuaded, well adapted to promote the great object of its publication, the diffusion of correct medical information among the physicians of Mexico. We shall doubtless be able, hereafter, to enrich our quarterly periscope from its pages.

ART. XXVI. *The Retrospective Address, upon Medical Science and Literature, delivered at the Fourth Anniversary Meeting of the Provincial Medical and Surgical Association, held at Manchester, July 21st, 1836.* By JOHN GREEN CROSSE, Esq., M. D., F. R. S., Surgeon to the Norfolk and Norwich Hospital, &c. &c. Worcester, 1836. 8vo. pp. 88.

This address presents a highly interesting and elaborate summary of the progress of our science during the past year, which must have cost the learned author much labour and research. It concludes with some judicious remarks on the medical literature of the day, which we regret being unable to quote, from the limited space at our command. Our collaborators cannot but feel flattered at the following very complimentary notice of this Journal.

“One American Quarterly,* which I can speak of from a regular inspection of each number from its commencement, claims a rank with the preceding, [The British and Foreign Medical Review,] and may be said to possess some advantages above every other Journal, in the number and rank of its avowed ‘collaborators,’ and in each article in the review department being authenticated with the writer’s signature; no coarse, personal, or unscientific matter, ever enters the pages of this periodical.”

* “*The American Journal of the Medical Sciences*, edited by Isaac Hays, M. D., with about forty “collaborators,” including men of the highest renown, and holding the most important hospital and professorial appointments.”

QUARTERLY PERISCOPE.

FOREIGN INTELLIGENCE.

SPECIAL ANATOMY.

1. *Structure of Bone.* By Professor JOHN MÜLLER of Berlin.—“*Purkinje* and *Deutsch* have lately published some interesting investigations, entitled, *De Penitiori Ossium Structurâ*; Diss. inaug. Vratisl. 1834. Tab. i. These investigations have been continued in Berlin by Dr. Miescher, who has for the most part confirmed their accuracy. *Purkinje* and *Deutsch* examined the cartilage of the bone cut into thin plates, and from which the earthy salts had been removed by an acid. Transverse slices of the long bones, when examined by the microscope, present cross sections of the longitudinal canals that traverse the substance of the bone; while longitudinal slices exhibited these canals in the direction of their axes. These canals contain marrow, and do not run together very frequently. In bones of a spongy texture they are replaced by cells containing medullary matter. These authors were lucky enough to discover the lamellar structure of the cartilaginous frame work of the bones. In the transverse sections the laminæ presented circular lines described round each of the canals; while in the longitudinal they appeared like lines parallel to the axis of each canal.

“The intervals between the laminæ that surround each minute medullary canal, are occupied by other laminæ that form larger circles round the central medullary cavity of the whole bone; in the broad bones of the cranium, and other flat bones, the laminæ lie parallel to the surface. *Miescher* has entirely confirmed these observations. The microscope discloses also other lines which run across these laminæ, perpendicular to their surface, and which *Deutsch* believed to be the canals that contain the phosphate of lime, a supposition not confirmed by *Miescher*, who found that the first appearance of ossification in the cartilaginous epiphyses of young bones, and in callus, consists in a microscopic dark-coloured network between the corpuscles forming the cartilage. As these lines run across each laminæ, they of course only equal in length the thickness of the latter; now *Purkinje* has made the very interesting discovery, that the cartilage of bone contains many scattered, round corpuscles, of much greater diameter than these lines; *Miescher* has not only confirmed this discovery, but has found similar corpuscles in the callus of fractured bones, in the cartilage of unossified skeletons, and also in those portions which either never ossify, or only do so in advanced life; as, for example, in the cartilaginous portions of the ribs and the larynx. These parts consist, as is well known, not of a fibrous, but an homogeneous structure, throughout which these corpuscles are scattered.”—p. 59 *et seq.*

Müller remarks upon this subject, that the laminæ visible in the cartilage do not make their appearance until after the formation of the minute medullary canals, and consequently the former cannot be considered as *primitive* constituents of cartilage. He observes, too, that these laminæ distinguish cartilage from periosteum, and serve, along with the presence of the corpuscles above referred to, to distinguish most definitely the structure of the cartilages of bones from that of periosteum, which consists of tendinous fibres. These corpuscles are not

the chief seat of the earthy or saline particles, nor does it yet appear how the latter are distributed. When the laminæ of bones, tinged with madder, are examined, the colour appears universally disseminated throughout the whole mass, and consequently as the earthy particles are the cause of fixing the colouring matter, they may be concluded to be equally diffused.

The corpuscles above spoken of, as visible in cartilage after the removal of the osseous particles, by means of an acid, may be distinguished without this in the finest laminæ or plates of the peculiarly delicate cobweb-like osseous reticulation, which we sometimes meet with in the medullary cavity of the human femur. These laminæ are quite transparent, and exhibit the corpuscles of an oval, occasionally rather elongated shape, uneven, and when viewed with a high magnifying power, jagged on the surface. This latter appearance is entirely wanting in the corpuscles of amphibious animals and fishes, and indeed generally is not met with. The outward table of the skull of pigeons exhibits plainly these corpuscles, even before the earthy particles have been dissolved out by an acid.—*Dublin Journal*, Sept., 1836.

2. *Three kidneys found in a human subject.*—Dr. C. H. THIELMANN of St. Petersburg has recorded an instance of this in *Graefe und Walther's Journal für Chirurgie*. The subject of the case was a sailor æt. 30, who died at the naval hospital at Oranienbaum, of typhus fever. On dissection, the left kidney was found of an extraordinary size, but in respect of situation, colour, consistence, and the insertion of its blood-vessels and nerves, it was perfectly normal. The right kidney, the structure of which was altogether healthy, was situated opposite to its fellow the left one, and rested on the lumbar portion of the diaphragm and the quadratus lumbaris muscle. Its ureter, which was rather smaller than that of the left kidney, passed down as usual to the place where the aorta divides into the two common iliacs. At this point, there was found a third renal gland, which rested on the right iliac artery, and on the psoas muscle. This third kidney was larger than the right one, and was of an oval shape, its two ends being somewhat widened or dilated. Its anterior surface was convex, the posterior one was flattened. The ureter of the right kidney, in passing along a longitudinal groove of this supernumerary one, joined, at about the middle of the gland, its ureter, and the common canal thus formed, and which was wider than either of the regular ureters, passed down to the bladder, and entered it at the usual place on the right side. The third or supernumerary kidney received three arteries; one of these was derived directly from the aorta, another from the right iliac, and the third from the hypogastric artery. One of its veins terminated in the ascending vena cava, and the two other in the right iliac vein. Its nerves were derived from the inferior mesenteric plexus, and they were interlaced with the right spermatic and renal plexuses. The structure of this kidney was altogether similar to that of the other two, in colour and in consistence. The relative size and weight of the three kidneys may be stated thus. The left kidney weighed upwards of eight ounces—the right one between three and four ounces—the supernumerary one upwards of five ounces. The left kidney was four inches and a half long, and nearly three inches wide—the right one measured three inches and a half in length, and nearly two inches in breadth—and the supernumerary one measured three inches and a half in length, and rather more than two and a half in breadth. The right and left kidneys were provided with supra-renal glands; the supernumerary one was not. The bladder and other parts of the uro-poietic system were quite normal. The man had never suffered from any urinary affection.—*Med. Chirurg. Rev.* Jan. 7, 1837.

GENERAL ANATOMY AND PHYSIOLOGY.

3. *On some points in the Physiology of Hearing and Seeing.* By Dr. STEINHEIM.—Seeing and hearing singly, with double organs of sense, belong undoubtedly to the more difficult points connected with the functions of the senses. It is well known that the single sense of touch is lost by crossing the fingers; for a little ball, as for instance a pea, communicates the sensation of two, when it is rolled backwards and forwards between the two first fingers crossed.

Something quite analogous to this takes place with respect to the sense of sight, in cases of absence of mind.

The object of sight separates gradually into two distinct images, an affection which is not unfrequently observed in cases of abdominal derangement. As when the fingers are crossed, the usual sentient association is interrupted by changing the position of the nerves employed, and in such circumstances each sentient nerve conveys its individual impression to the mind; so when the direction of both eyes to a single object is interrupted, the ordinary position of the optic nerves is changed, and each becomes sensible to the individual impression. If we now reflect, that in both the cases alluded to, it is the business of consciousness to receive the double impression as a single one, (in consequence of which the error produced by the unusual position of the nerves of touch, is, after a few experiments repeated in quick succession, corrected,) the impression made on the senses is, without doubt, in every instance double with respect to the three objective senses—touch, sight and hearing.

This phenomenon is universally known with regard to the two first senses; the same thing remains still to be proved with respect to the sense of hearing; namely, "THAT EVERY SOUND IS HEARD BY EACH EAR SINGLY, AND MAKES TWO IMPRESSIONS WHICH BECOME BLENDED INTO ONE.

In order to perceive this phenomenon, the following procedure should be adopted. The experimenter strikes two quarter notes with two fingers of the left hand, and at the same time a half note with one finger of the right hand; if he now listens attentively to the sounds produced by the right and left hand, he will hear four instead of three sounds; provided the notes are struck in such a manner that the stroke of the right hand finger falls between the two strokes of the left, which are only half as long as that of the right; that is to say, on the left a triole (000) and on the right a single stroke, and the latter will be thus doubly heard, between the two quarter tones, and at the same time individually as a half note.

Now, we cannot well imagine that the note produced by the right finger is heard twice by one ear; it remains then only to assume, that it is perceived by the right and left ear separately.

It may not be here out of place, to communicate some observations on seeing, which belong to this point.

Any person whose eyes have different focal distances, may easily repeat them, as I have frequently done. Persons are seldom aware of the unequal power of the double organs of sense, unless it be very remarkable, or happen to be discovered by accident. I know a man, who became for the first time aware of an amaurosis of the right eye, on looking one day through a telescope, and finding that he saw nothing. He cleaned the glass, but in vain, and then for the first time became conscious that he had lost the sight of his right eye. With regard to myself, I was informed of the twofold difference between my right and left eye, in the following manner. I happened to be in a rather dark room, opposite a door, at the moment when the opposite illuminated wall was seen distinctly through the keyhole. The bright image of the keyhole separated into two, and these two very dissimilar images. The image of a large bluish keyhole presented itself opposite to my left eye, that of a small yellowish white one opposite to my right eye; in the larger one the lines of the opposite bright wall, which shone through, were confused together; in the smaller the same white lines were sharply defined. Further trials of my sight, by looking at a white surface with each eye alternately, convinced me that my right eye was *myopic*, (short-sighted,) and saw objects large, and of a blue colour; and that my left eye was *presbyopic*, (long-sighted,) and saw objects small, and of a yellowish colour.

But how then did it occur that the image of the keyhole opposite my left eye appeared larger, more indistinct, and bluish; while that opposite my right eye seemed smaller, more sharply defined, and yellowish. It was produced by the crossing of the image, for in this way the image seen by the right eye was to the left of that seen by the left eye, and *vice versa*; and hence it happened that it must have appeared to me as if both eyes had exchanged their mode of seeing.

In this way I explained to myself this singular optic phenomenon. There is another, which up to the present day is still to me a riddle. It is well known that we can assist a short-sighted eye by diminishing its field of vision. Short-sighted

persons instinctively draw their eyelids together, or look through a small opening between the index and middle finger, formed by laying their tips perpendicularly on the thumb nail. This artifice is of great help to my right eye, but it also assists my left eye, which is long-sighted, and that is to me a problem, the explanation of which I cannot even conjecture. As distant objects appear clearer and more distinct to my right eye, when I look at them through the small triangular opening formed by the three first fingers, in the same way near objects become distinct to my long-sighted eye by the same mode of proceeding.

Another phenomenon, which seems to be worthy of attention is, that from two different images seen by each eye separately, a single homogeneous one is produced, in such a manner that with respect to distant objects the colouring of the far-sighted, and with respect to nearer objects, that of the near-sighted, preponderates. Again, the power of vision in both cases is diminished, when one or other of the eyes is closed. Near objects, which I can no longer discern with the left (far-sighted) eye, and consequently must be seen with the right, become still more indistinct when I close the left; and I also see distant objects more clearly with both eyes than with the left alone, with which alone, however, I am able to discern distant objects.—*Dublin Journal*, January, 1837, from *Hecker's Annals*, 1836.

4. *Discovery of ciliary motions in the cavities of the Brain.* By PURKINJE.—“I have succeeded at last in discovering the Ciliæ and their motions in the ventricles of the brain in the mammalia. Last summer, while examining the Chordæ Bergmanni, I perceived on fine sections of the epithelium, a structure resembling the ciliary membranes, and suspected that this epithelium possessed a similar function. I thereupon made numerous investigations with this object in view, but without any result, until the 23d of May, when I succeeded in discovering the ciliary motions in a state of the most beautiful activity, on the edge of the Tenia Hippocampi, in the tolerably mature fœtus of a sheep thirty hours after slaughter. They now appeared quite distinct over all the windings of the ventricles, and they could be plainly distinguished, even where they did not appear in motion. I followed the motions without difficulty through the third ventricle to the infundibulum, to the olfactory tubercles, and finally through the aqueduct of Silvius into the fourth ventricle. Here the motion ceased, but the ciliæ were still distinctly observable, although somewhat shorter than in the foregoing situations.”

“The ciliæ are proportionably long, pointed, (not ragged as in the bronchial tubes,) and exhibit a whip-like vibration; we perceive also a layer of granules to which they are attached, and which are very easily rubbed off without destroying the continuity of the epithelium. The other day I examined the brain of a sheep, in which they could also be perceived with great facility. They have been seen likewise by Dr. Valentin in the tolerably matured fœtus of a sow; in another fœtus of the same description, at a much earlier period, they could not be distinguished: probably the parts are too delicate for our clumsy instruments. On the whole, I have perceived from these few examinations, that the ciliæ found in the ventricles of the brain possess a finer degree of sensibility, and are much more easily destroyed than those of any other organ; I have not been able to discover them in the brain of a sparrow, or of a carp, which I examined, but cannot, on this account, draw any conclusions as to their non-existence. I could not detect any traces of them in a diseased human brain which was sent me: probably they are very transient, (as appears to be ascertained from the female ovary, and the mucous membrane of the nose), but as easily reproducible. I could not find any ciliæ in the membrane of the choroid plexus; but I have made long since a very interesting observation on this membrane. The whole plexus is covered by a peculiar matter, like the granular substance of the ganglions; and composed of the most regular granules, each of which contains a small corpuscle in its centre. This membrane appeared to me at the time as belonging to the nervous tissues, although at present I see so many reasons to look upon it as epidermal.—*Dublin Journal*, March, 1837.

5. *On Digestion.* By Dr. SCHWANN, of Berlin.—It is known that Eberle discovered in the year 1834, that the mucous membranes, when digested in dilute

muriatic and acetic acids, furnished a mass similar to the gastric juice, which dissolved, and altered most alimentary matter, in a manner similar to what takes place by digestions in the stomach. The same fact was stated by Müller and Schwann with regard to coagulated albumen; and further, the latter experimenters have proved, that in this operation there is neither change in the contiguous atmosphere nor disengagement of gas. From these facts it was interesting to know what the bodies are which in the natural gastric fluids, of which Eberle has recognised the identity of action with the acids mentioned above, produce the solution and modifications undergone by the alimentary matter in the interior of the stomach.

The first experiments of Schwann on artificial digestion, indicated that there was not one sole dissolving agent, but that the bodies, which are the agents of this solution, are themselves different for different kinds of alimentary matter. The attempts made hitherto upon this class of phenomena have demonstrated that these latter substances may be ranked under three classes.

1. Those which, without the assistance of the free acids of the gastric juice, may be perfectly digested by the saliva; to this class belongs starch exposed to the action of heat, which, by artificial digestion in the saliva, as well as in the stomach, is converted into gum and sugar.

2. Those which are only dissolved by dilute muriatic or acetic acids; to this class belongs coagulated caseum, gelatin, or gluten. At least, the reactions which are exhibited in solutions of these substances in dilute acids agree in the principal particulars with those which Tiedemann and Gmelin have observed in the natural digestion of these substances; gelatine, for example, in this way loses the property of coagulating and precipitating by chlorine which characterizes it.

3. Those to which, besides the free acids, the assistance of another digestive principle is still necessary; such are all the albuminous substances, and especially the coagulated white of egg, fibrin, and, to a certain extent, dissolved caseum.

This latter class of substances has particularly attracted the attention of the author, both because it contains the most important alimentary matter, and because they answer perfectly for experiment.

In order to make these experiments, a *digestive fluid* was procured by digesting, for 24 hours, the mucous membrane previously prepared from the third and fourth stomach of an ox in water, acidulated with $2\frac{3}{4}$ per cent. of muriatic acid, and filtering the fluid. This digestive liquid thus prepared contained nearly $2\frac{3}{4}$ per cent. of solid matter in solution, and required above 2 per cent. of carbonate of potash to neutralize it. It dissolved almost entirely coagulated white of egg, by exposure for several hours to a temperature of 100° . The researches of Müller, and of several other chemists, have proved that acids simply diluted do not dissolve albumen, and that consequently acids by themselves have no action, and that something else must assist in the act of digestion. Schwann had observed, besides, that the digestive liquid described lost its action by saturation, and that consequently acid must play an important part in digestion; but that, independently of acid, the presence of another body is still necessary. The researches, then, upon the action of acid tend to demonstrate the following facts:—1. That there is nothing less than neutralization of the digestive fluid, from which nothing has been precipitated, that can deprive it of its digestive power. 2. That the digestive fluid diluted with acidulated water produces good digestion, but not if it is diluted with water only. The necessary quantity of acid not being regulated by that of the digestive principle, but by the quantity of water, of which it ought to amount to about $2\frac{3}{4}$ per cent. for the muriatic acid of commerce. 3. That the quantity of free acid by the act of digestion remains unaltered.

Hence we have a right to conclude, that the free acid assisted not only in the formation of other digestive principles, and for solution, or to form chemical combinations with them, but besides that, it acts by the effect of contact, as in the transformation of the starch into sugar.

It remained to investigate the properties of this other *digestive principle*, which is active, and independent of the acid. The new researches of Schwann have in the first place proved that the digestive fluid when filtered and perfectly clear dissolves albumen, and that it is itself soluble in dilute hydrochloric and acetic acids; that when it is neutralized and filtered, and a certain quantity of acid is added to the clear liquid, this fluid preserving its digestive power, the principle

must remain in the state of solution in the neutral fluid, and that if neutralized the digestive fluid is evaporated at a very low temperature, so that it shall not lose its property, and if the residue be treated with alcohol, the digestive property disappears; that the digestive principle is equally destroyed by alcohol; and lastly, that when heated to the point of ebullition the fluid and the principle were decomposed.

To test the action of ordinary re-agents, Schwann confined himself to mixing each of them with the digestive fluid in an acid or neutralized state, by separating by filtration the precipitate from the liquid portion, washing carefully the former, and re-dissolving them in water containing $2\frac{3}{4}$ per cent. of acid; and lastly, treating by a new re-agent, which might increase at least in part the effect of the first, such, for example, as sulphuretted hydrogen. In this manner, according as the digestive property remained in the fluid containing the precipitate, or in that which had been filtered, and which contained the unprecipitated parts, the digestive principle, was separated by the re-agents, or resisted their action. By this means it is ascertained that acetate of lead precipitated this principle from the acid digestive fluid more completely than in that which had been neutralized; that this principle is equally precipitated from neutral solutions by corrosive sublimate, but not in the acid digestive fluid by the ferrocyanodide of potassium. One of the most characteristic re-actions is the precipitation of caseum, or the coagulation of milk. The latter when heated by the digestive principle exhibits the following results: 1. The digestive fluid produces the coagulation of milk by means of heat, when its quantity does not exceed 0.42 per cent.; while for a liquid which contains only hydrochloric acid diluted to the same degree, it requires more than 3.3 per cent. 3. An elevation of temperature to the boiling point removes this property from the neutralized digestive fluid, which authorizes us in concluding that the digestive principle is thus destroyed. 4. The digestive fluid and the caseum dissolved, may be mutually employed as re-agents; a fluid which only contains .0625 per cent. caseum affords still a sensible precipitate with the neutralized digestive fluid.

These various reactions of the digestive principle characterize a new substance to which Schwann proposes to give the name of *pepsine*; and it is obvious that the manner in which this substance acts with caseum is sufficient to distinguish it from all others, and especially from mucus. Mucus appears to be the substance at the expense of which the *pepsine* by a peculiar transformation, and treatment by dilute hydrochloric acid is formed; at least pure mucus, that of the saliva for example, treated by dilute hydrochloric acid exhibits, although in a feeble degree, the power of dissolving albumen. In reference to the action of the digestive principle upon albumen, Schwann considers it to be the effect of contact; this conclusion is especially drawn from the small quantity of pepsine which is sufficient to dissolve a great quantity of albumen. Acidulated water, which contains only $\frac{1}{4}$ per cent. of digestive fluid, still manifests sensibly the power of dissolving albumen, and with $\frac{1}{4}$ of an ounce of acidulated water to which 4.8 grains of digestive fluid have been added, nearly a drachm of coagulated albumen of the white of egg will be dissolved in 24 hours at the temperature of 99.5. Now as 4.8 grains of digestive fluid only contain 0.11 grains of solid matter, and as 1 drachm of moist albumen weighs about 10 grains after desiccation, we see that in considering all the solid matter contained in the fluid as pepsine, 1 part of this substance acts upon 100 parts of albumen. As in this action the digestive principle loses a great part of its digestive properties, it follows that it has undergone a change; however it should be observed, that among the conditions necessary for development of this action in the most complete manner a temperature of from 99.5 to 132° is required, but it is still manifested at 34 $\frac{1}{4}$ ° and 59°. At the favourable temperature, coagulated albumen when it has been sufficiently comminuted, dissolves in from 6 to 24 hours, fibrin extracted from the blood in from 3 to 12 hours. The presence or the contact of atmospheric air, according to Müller and Schwann are not necessary in this action, and there is no evolution of gas; some salts, such as the sulphate of soda, which acts equally upon the vinous fermentation, oppose the digestion of albumen.

The changes which albumen and fibrin undergo by the action of pepsine united with acids, is not a simple solution, but a decomposition, since the first of these substances occasions—1. A substance which resembles the coagulated albumen of eggs, which is entirely dissolved in the acid, and is precipitated by

neutralization. 2. Osmazome. 3. Mucus. The digestion of the fibrin gives the same products with the exception that the fluid in which the fibrin has been dissolved does not contain coagulated albumen, which can be precipitated by an elevation of temperature. Boiled and raw muscular fibre dissolve like fibrin, although with a little more difficulty.

In conclusion, Dr. Schwann refers to his original paper inserted in *Müller's Archiv*. 1836. s. 90.—*British Annals of Medicine*, March 3, 1837, and *Poggen-dorff, Annalen*, xxxviii. 538.

6. *Some experiments and observations on tying the carotid and vertebral arteries, and the pneumogastric, phrenic, and sympathetic nerves.* By Sir ASTLEY COOPER, Bart.—The anastomosis of arteries in all parts of the animal frame, and the circuitous channels through which the blood, when arrested in its progress along a principal trunk, is conveyed to its destination, have been for some time well ascertained; and the advantages arising from this arrangement of vessels in the natural condition of the body, as well as the safety afforded by it under certain accidents, diseases, and operations, are perfectly understood.

The existence of these anastomosing vessels has been proved, by the examination of diseases in which blood-vessels have been obliterated, by experiments performed upon the arteries of living animals, and by the result of surgical operations upon the human subject, and the dissections after death; and the injected preparations contained in our anatomical museums exhibit, for the principal arteries of the body, the place at which the main trunk has been rendered impervious, and the mode in which the circulation has been preserved.

In the chest, the aorta has been obliterated by disease, and the intercostal arteries have supplied its place in carrying on the blood. In the abdomen, the aorta has been entirely obstructed by an aneurism situated above the bifurcation; the two iliacs below being reduced to mere cords. The common iliac has been successfully tied by Mr. Guthrie; and the internal iliac by Mr. Stevens. The external iliac, and the arteries below it, have been now so frequently tied, and the anastomosing vessels so clearly demonstrated, that no doubt is entertained of an adequate supply of blood being sent to the lower limbs after these operations.

The subclavian arteries have but few anastomoses; but they are still sufficient to nourish the upper extremity; and the arteries of the arm below may be tied without danger of an insufficient supply by subsidiary currents.

The carotid arteries have been found, by Baillie, obliterated by disease. That artery has been now frequently tied on one side of the neck; and it has even been secured, at distinct periods, on both sides of the neck of the same person: and in these cases the current of the blood has still flowed freely into the remote branches.

Still, however, the intimate connexion between the functions immediately essential to life—of the brain and other organs, and the necessity for a due supply of blood for the maintenance of cerebral action, gives to the vessels of the head extreme importance in the eyes of the surgeon and physiologist, and justifies him in pushing his inquiries respecting them to the utmost limit.

It will be seen that some animals die immediately from interrupting the circulation in the carotid and vertebral arteries; but that others survive the experiment, and give an opportunity of ascertaining the means of anastomosis.

Ligatures placed upon the vertebral and carotid arteries of a dog.—On the 28th of January, 1831, I tied the right and left vertebral and the right and left carotid arteries of a dog, and all was completed within half an hour. The animal appeared insensible, or as if it were intoxicated; it had difficulty in breathing; its pupils were dilated; its volition was diminished; and it ran against the leg of the table, or any other body, without seeing or regarding it. When placed upon its legs, it fell down on its right side, and had spasmodic twitchings of its hinder extremities. At the expiration of a quarter of an hour, it was still insensible: it had shiverings, although placed near the fire: it rested its head upon the ground on the right side: its respiration was still laborious; and its pupils were dilated. After an hour and a half, however, it was able to stand, and, although with difficulty, to stagger around a small room.

On the 29th, it was dull, and indisposed to move. On the 30th, it was much

the same, and not inclined to move or eat. On the 31st, it walked round the room; and ate about an ounce of food, but would not lap. On the 1st of February, it was much better: it ate and drank; and from that time gradually recovered. It afterwards became a good house-dog; and I kept it for nine months, when it was killed, that I might inject it. The number and the size of the anastomoses were very extraordinary. The description of them is as follows: The carotid artery on the right side was obliterated opposite the fifth and sixth cervical vertebræ: below the obliteration it is injected from the aorta; above the obliterated part it is filled with injection, (1) from the inferior thyroideal artery communicating with the superior thyroideal by large branches; (2) by a large descending cervical branch, dividing into numerous large anastomoses; and (3) by branches from the vertebral artery anastomosing with the external carotid artery on the first vertebra of the neck. The left carotid was obliterated from near its origin, but filled with injection above the obliterated part, by the inferior thyroideal artery communicating with the superior, and by the ascending cervical artery from the subclavian, by numerous and large anastomoses, and by an œsophageal artery from one of the intercostals communicating with the superior thyroideal artery. The right vertebral artery was obliterated near its origin on the seventh cervical vertebra, but filled with injection above the obliterated part by two branches from the superior intercostal arteries, which passed, on the back of the spine, into the arterial canal of the vertebræ, at the fourth, fifth, and sixth intercostal spaces. The vertebral artery thus produced passed to the second vertebra of the neck, where it formed the basillary artery, and, in its course, had festoons or loops formed in it, as far as the first vertebra, at each intervertebral substance; and here, upon the transverse process of the first cervical vertebra, it formed communications with the carotid. The left vertebral artery was obliterated close to its origin, but was filled with injection by an anastomosing branch from the superior intercostal artery, which entered between the fifth and sixth vertebræ of the neck; and by a second branch, also, from the intercostal artery passing on the posterior surface of the transverse processes of the fourth and fifth cervical vertebræ; then, over each transverse process was a loop of arterial communication, forming down each side a beautiful display of festoons.

On a second occasion, I tied the left vertebral artery of a dog. I then secured the right vertebral; and after an interval of eight days I put a ligature on each carotid artery. The animal was weakened in its forelegs; but in other respects it suffered less than the former; and on the following day it took its food as usual. The right carotid was obliterated; the injection passed from the aorta to the obstructed part, and above it, by an anastomosing vessel from the vertebral, and by an ascending cervical artery from the right subclavian. The left carotid was obliterated, but filled with injection to the place of obliteration, from the aorta; and above, it was filled by an ascending cervical, an inferior laryngeal branch, and others from the vertebral. The right vertebral artery was obliterated opposite the seventh cervical vertebra, before it entered the foramen of the sixth vertebra; but above the obliteration it was filled by an anastomosis with the superior intercostal artery: it then ascended through the canal in the sixth cervical vertebra, forming beautiful festoons and injunctions with arteries passing over the vertebra, opposite each intervertebral substance, and joining, by anastomosis, with the carotid at the first vertebra of the neck. The left vertebral artery was obliterated at the seventh vertebra; but the artery formed anastomosis, one with the subclavian, and two with the superior intercostal. The artery on this side formed similar but larger junctions than the right, opposite to each intervertebral substance, in festoons or loops; and thus the vertebral artery was reproduced, and filled with injection from these vessels. The two vertebral united to form the basillary artery as usual, and joined with the internal carotids at the circle of Willis.

Where the basillary artery was first formed, anastomosis were sent to the carotid arteries on the transverse process of the first cervical vertebra.

The result of tying the carotid and vertebral arteries in the dog is such as I have described; but in the rabbit it is different, as in this animal the arrest of the blood in these four vessels is immediately fatal.

Besides the determination of this point, it was my object, in the following ex-

periments, to ascertain the different effects which would be produced by tying separately the vertebrals and the carotids. The size of the carotid arteries, compared with the vertebrals, is much less in some animals than in man, in proportion to the inferior developement of the cerebrum; and the tractus respiratorius being supplied by the vertebrals, the current of blood in these arteries might be supposed to exercise an influence on the respiration.

Ligature placed on both carotid arteries.—In the first place, I applied a ligature to the carotid artery on each side of the neck. Little effect was produced; except, that the respiration was quickened for a few minutes, and the animal rendered dull and disinclined to eat during the day: but on the following morning it appeared lively, and ran about with its natural activity. So that it may be truly said, that these two arteries may be tied with very little change in the functions of the animal, excepting that the respiration is quickened; and this perhaps may be attributed to a greater quantity of blood being impelled through the vertebral arteries, in consequence of its interruption in the carotids.

Ligatures placed on both vertebral arteries.—I next placed a ligature around both vertebral arteries. When I had tied the first, there was some difficulty in breathing; but when I had tightened the second ligature, this difficulty was greatly increased. The respiration was at first slow, but it afterwards became quicker. The animal retained volition and sensation, but its fore legs were weakened.

At the end of two hours, its breathing was laborious; its ears dropped to the right side; its heart beat quickly; it was dull, and indisposed to move; and its fore legs were still weak. After four hours and a half, it ran about, but with its ears fallen: its respiration was slower. On the following day, there was a murmuring in its breathing, which was increased under excitement: its heart beat quickly and forcibly: its pupils were not dilated. On the second day, the respiration was slow and heaving; it had an irregular action of the heart; it was dull; and its heat was 102. In the evening, its respiration was irregular and heaving; but it moved about, and took food. On the third day it was dull: its breathing was slow: its heart beat quickly: it ate food. On the fourth day, it appeared heavy, and indisposed to move. The action of its heart was quick and strong: its respiration was slow, but no longer stertorous. On the fifth day, its breathing was slow: it appeared dull and heavy: the action of the heart was still quick. On the sixth day, the respiration was laborious and slow, being only 64, instead of between 120 and 150, the natural number of inspirations in a minute: its heart beat rapidly, and not forcibly; it was very dull, and indisposed to move: it was getting thin, but took its food as usual. On the seventh day the animal was found dead; and on the eighth I examined it, after injection, and found an abscess in the neck. The vertebrals had been well secured, and the brain had received injection by the carotid: the basillary and cerebellal arteries were filled from the circulus arteriosus. This animal's death may have been hastened by the abscess.

I have many times repeated this experiment; and it uniformly produces a marked effect upon the respiration, which it renders slow and laborious. The fore legs are weakened; and a much more severe effect is produced upon the animal than when the carotid arteries are obstructed; insomuch, that it will rarely recover from the operation.

The carotids first tied, and then the vertebrals.—The next step was, to ascertain the effect of arresting the blood in the vertebrals, after the carotids had been secured. I tied the carotid arteries: the respiration and circulation became quicker: volition and sensation remained in all their activity. In twenty-four hours, the animal appeared very lively, but its breathing was quicker than natural. After forty-eight hours, it breathed less quickly; it ran about in a lively manner; and it ate heartily. On the third day it was difficult to catch: on the fourth, fifth, sixth, seventh, and eighth days, it appeared to be in a natural and healthy state: and on the ninth I exposed the vertebral arteries, and found them obviously enlarged. A ligature was tied upon each of these vessels. The respiration stopped immediately, and the animal appeared dead; but it afterwards made seven gasps, from convulsions of the diaphragm: its hinder extremities became also convulsed; but in a minute, all voluntary motion ceased.

On opening the abdomen and chest, it was seen that the peristaltic motion of the intestines remained; and the heart continued to act for a few minutes after apparent death.

This experiment shews how little the functions of the brain depend upon the carotids, and how much upon the vertebral arteries.

Carotids tied—vertebrals compressed.—As tying the vertebral arteries is a difficult experiment, it occurred to me that I might compress them with my fingers, after tying the carotids, and produce the same effects. I tied the carotid arteries. Respiration was somewhat quickened, and the heart's action increased; but no other effect was produced. In five minutes, the vertebral arteries were compressed by the thumbs, the trachea being completely excluded. Respiration almost directly stopped; convulsive struggles succeeded; the animal lost its consciousness, and appeared dead. The pressure was removed; and it recovered, with a convulsive inspiration. It laid upon its side, making violent convulsive efforts; breathed laboriously; and its heart beat rapidly. In two hours it had recovered; but its respiration was laborious. The vertebrals were compressed a second time. Respiration stopped: then succeeded convulsive struggles, loss of motion, and apparent death. When let loose, its natural functions returned, with a loud inspiration, and with breathing excessively laboured. In four hours it was moving about, and ate some greens. In five hours the vertebral arteries were compressed a third time, and with the same effect. In seven hours, it was cleaning its face with its paws. In nine hours the vertebral arteries were compressed for the fourth time; and with the same effect upon its respiration. After thirteen hours, it was lively. In twenty-four hours, the vertebral arteries were compressed for a fifth time, and the result was the same, viz. suspended respiration, convulsions, loss of motion and consciousness. On the removal of pressure, violent and laborious respirations ensued; and, afterwards, the breathing became very quick. After forty-eight hours, for the sixth time, the compression was applied, with the same effect.

Thus it appears, that if the carotid arteries are tied, simple compression of the vertebrals succeeds in putting an entire stop to the functions of the brain.

Vertebrals tied—carotids compressed.—I then reversed the preceding experiment, by impeding the current of blood first in the vertebral arteries. I placed a ligature tightly around the vertebral arteries. The respiration became immediately laborious: its right ear fell, and the right fore-leg was partially paralyzed. In one hour it was indisposed to move; its respiration was slow and laborious; and its right fore-leg in a great degree recovered. Its sensation remained; but its volition was less than before the experiment: it smelt at the food offered, but would not eat it. In three hours, green food was placed in its mouth, which it ate. In five hours, it was running about; but its right ear remained in the same situation. On the following day, its respiration was slow, and it appeared dull. I pressed, with my thumbs, the carotid arteries on each side of the larynx, which was left free. It fell upon its side; it lost all sensation and volition; and its eyes were drawn back. Upon removing the pressure, it soon recovered. On the second day, its respiration was quick; its ear much risen; its fore-leg less paralytic: it sat up; and moved from place to place. A second time I compressed its carotids. Its eyes were drawn back; it was convulsed; and its respiration was quick and laborious; and it was affected in the same way as on the preceding day, but in a less degree. On the third day, its respiration was hurried, and 150. For the third time I compressed its carotids. It fell upon its side, and was insensible; but soon recovered, and ran about. On the fourth day it was dull, and its respiration was laborious: it ate some green food. In the afternoon of this day, it became very dull, and refused the food placed before it; and on the morning of the fifth it was found dead.

I injected this animal with coarse injection: and, upon dissection, it was found that abscesses had formed around the ligatures. The vertebral arteries were fairly tied, and the carotids greatly enlarged, but they were compressed by the abscesses. The injection had entered the cranium by the internal carotids, but not by the vertebrals; nor was there any injection in the basillary artery by the circle of Willis.

Carotid and vertebral tied on the same side.—On another occasion, I tied the carotid and vertebral arteries on the same side; the breathing became laborious, and the fore-leg was partially paralyzed. I subsequently compressed the vessels on the other side, with the usual effect of producing apparent death: but the pressure being removed, the animal recovered; and at the expiration of eighteen

days it was quite well, excepting that it had a difficulty in breathing under excitement. It was then killed and dissected. The arteries had been securely tied. It appears, then, that the obliteration of one carotid and one vertebral, on the same side, does not produce a fatal effect.

Vertebral and carotid arteries tied at the same time.—In order to cut off at once the several currents of blood to the brain, I tied at once both the vertebral and carotid arteries. The animal breathed no more; but there were thirteen or fourteen convulsive contractions of the diaphragm, and convulsions of the hinder extremities, and the animal ceased to exist.

This is a most decisive experiment; shewing the effect of the arrest of the blood in the vessels of the brain, in stopping respiration, volition, and sensation; and the result is striking and immediate.

The same effect of interrupting the streams in the vertebrales and carotids was produced in an equally conspicuous manner, without the application of ligatures, as follows. The animal was held in a convenient position, with its neck extended, and its head thrown back. I then applied my thumbs, so as to compress, at the same time, the two vessels on each side, taking care to leave the trachea entirely free from compression. Respiration ceased in a few seconds: some struggling then took place, and the animal appeared dead. The pressure being then removed, the respiration was completely suspended; but artificial motion being given to the ribs, the animal gasped, began to breathe quickly, and recovered.

I also put a ligature around the neck, close to the sternum, so as to compress the carotid and vertebral arteries; but the trachea was excluded, by passing the ligature behind it. Although the trachea remained free, as soon as the ligature compressed the carotid and vertebral arteries, breathing ceased, and all the functions of the brain were destroyed.

Before I would venture to draw conclusions from the experiments above detailed, I was desirous of convincing myself that no injury done to the nerves could have influenced, in any material degree, effects which had been observed. I proceeded, therefore, to investigate the consequences of applying ligatures to the principal nerves of the neck.

Ligatures placed on the pneumogastric nerves.—In the first place, I put a ligature on each pneumo-gastric nerve. The animal's breathing became heaving and laborious, and fell from 150 to 48 inspirations in the minute: it was likewise accompanied by a stertorous noise: the heart beat feebly, but rapidly; food was refused. These symptoms continued; and on the following morning it was found dead. The same experiment was several times repeated, and the results were nearly uniform, the animals dying at the end of from nineteen to twenty hours.

In these experiments, it was likewise observed that the blood circulating in the arteries gradually assumed the venous colour, and that the animal heat at the same time decreased in a remarkable degree.*

* These facts were carefully noticed in the following experiments:

EXPERIMENT 1, ON THE RABBIT. Respiration, 132 in a minute: Heat 104.

The pneumo-gastric nerve was tied on each side: the breathing became stertorous? the animal dull, and disinclined to move.

In 1 hour, respiration 48.

3 hours 44.

4 56. Animal Heat $99\frac{1}{4}$ in the anus.

3 48. $93\frac{1}{4}$.

I opened the carotid artery, and blood of a venous colour escaped. I tied the artery.

In 11 hours, respiration 36. Animal Heat 93.

$12\frac{1}{2}$ laborious, and 30. $9\frac{1}{4}$ to $\frac{1}{2}$.

12 respiration the same. 89.

The rabbit died at this time, and the heat of the abdomen was $88\frac{1}{2}$.

Examination. Lungs loaded with dark blood: water in each cavity of the pleura: food in the œsophagus: stomach loaded with food.

EXPERIMENT 2. The Pneumo-gastric nerves tied.—Respiration 135 before the experiment. Animal Heat 102.

In 1 hour respiration 48. Animal Heat 99.

3 hours 39. 99.—(Stertor, or moaning, under excitement.)

4 33. $98\frac{1}{2}$ —(The animal dull, and disinclined to move.)

6 36. 96: cold to the touch.

The examinations after death exhibited the lungs gorged with blood, and looking like the liver; a fluid in the pleuritic cavity; the stomach full of undigested food; and the œsophagus likewise distended with it, in those cases in which the animals had taken food after the ligatures had been applied.

Ligatures placed on the phrenic nerves.—In another rabbit, I divided the phrenic nerves one after the other, in immediate succession.

The diaphragm being then paralyzed, the animal's respiration, which was performed by the intercostal muscles, instantly became excessively laborious. The ribs were heaved violently; and a much greater effect was produced on the respiration than when the vertebral arteries, the pneumo-gastric nerve, or grand-sympathetic, were tied.

In a quarter of an hour it lay upon its side, making great efforts with its intercostal muscles; and sometimes it stopped, as if fatigued, and then again commenced. In twenty minutes it was dead. On examination the phrenic nerves were found to be completely divided.

The heart's action, and the peristaltic motion of the bowels, were observed for a short period after apparent death.

In this experiment, respiration was rendered difficult, by obstruction to the mechanical apparatus destined to provide the necessary supply of fresh air: whereas, in the former, the difficulty arose from the failure of those processes which in health are carried on within the lungs; and may we not thence infer, that the changes of the blood are not chemical alterations merely, but dependent also upon the vital agency of the nerves and blood-vessels?

Ligatures placed on the grand-sympathetic nerves.—I now tied the grand-sympathetic nerve on each side. The respiration became quick and irregular; but sensation and volition were unaffected. The heart's action was very quick: there was a general trembling; but when the animal was put down upon the ground, it ate some greens. Its respiration continued irregular, and its heart's action very quick; and after eight days it was killed. The nerves were found well tied: one had already ulcerated below the ligature; the other was nearly ulcerated through; and the ligature was surrounded by suppuration.

In another rabbit, I tied these nerves; and the animal, although it is near a month ago, is still lively and active.

Ligatures placed on the pneumo-gastric, phrenic, and grand-sympathetic nerves. Lastly, I tied, in one rabbit, the pneumo-gastric nerve, the grand-sympathetic, and the phrenic. The respiration became laborious; the animal dull, and indisposed to move; and the heart's action feeble. The breathing continued excessively laborious for a quarter of an hour, when the animal died. Bloody fluid was found in the chest: the lungs were not much changed. In another similar experiment, the animal died in three-quarters of an hour.

We see, then, that an animal with all these nerves compressed may live from a quarter to three-quarters of an hour; that the ligatures on the pneumo-gastric kill in about twelve hours; and in the grand-sympathetic, that the animal will continue to live for a much longer period: so that pressure on these nerves, in the experiments in which the arteries were compressed by my thumbs, could not have been the cause of death.

The effect of tying the jugular veins of the rabbit is not constantly the same in all cases; as the following instances prove.

Ligatures placed on the jugular veins.—In one rabbit I tied the jugular veins on each side of the neck. When it was set at liberty, it ran about, cleaned its face with its paws, and took green food.

In 12 hours respiration 36. Animal Heat $97\frac{1}{2}$.

14 32. $95\frac{1}{2}$.

16 28. 93.

16 $\frac{3}{4}$ hours the animal died. Its heat 87 in the abdomen, at the time of its death.

The animal felt cold long before it died.

The gradual decrease of the animal heat, the dark blood circulating in the arteries, and the gorged state of the lungs after the application of a ligature to the par vagum, are interesting and important circumstances: and we are led to question, whether the lungs, by this operation, are deprived of a nervous or vital influence essential to the change of the blood; or whether this change is not produced in consequence of the slowness of the animal's breathing: for when the phrenic nerves have been tied, the blood also becomes dark in the arteries. In that case, however, the lungs are not found gorged by blood.

Its respiration was reduced to 68 inspirations in a minute, which is about half the natural number. After four hours, it ran about as if nothing had happened; and eventually recovered.

When it was killed and injected, I found, on each side, three anastomosing veins passing from the anterior to the posterior part of the jugular vein, and conveying the blood from the head to the heart; but the vertebral vein had remained whole, and become enlarged; and it passed, on the fore part of the vertebræ, from the head to the space between the fourth and fifth cervical vertebræ, where it entered the vertebral canal.

In a second rabbit, I tied the jugular veins on each side of the neck, as before. The animal's respiration became slow; but it ate green food, ran about, and was difficult to catch: but for five days after it appeared dull; its ears had dropped. On the seventh day, it was seen to be convulsed, and frequently rolled over. Its voluntary powers were lost, as well as its sensation, in a great degree. On this day it died. On examination, a clot of blood was found extravasated in the left ventricle of the brain.

Hence it follows, that apoplexy will occasionally result from an obstruction to the return of blood in the jugular veins; and this I have known to happen from enlargement of the glands in the neck of a boy.

Inferences drawn from the foregoing experiments.—It appears, from these experiments, that the carotid arteries are designed in these animals rather for the supply of blood to the external parts of the head than to the brain itself; whilst in proportion as the brain is more developed, the carotid artery acquires greater importance. The obstruction of it influences respiration in some degree; probably, because, under these circumstances, more blood is directed to the vertebral arteries. The internal carotid branches are proportionably less than in those animals which have a large cerebrum, and are endued with higher mental faculties.

It passes to its destination, to prevent the action of the heart from influencing the brain immediately.

The rabbit quickly recovers from the operation of tying these arteries, and seems little affected by it: and in man, as well as in these animals, these vessels are obliterated without the destruction of life.

The vertebral arteries are much more important vessels, as regards the brain and its functions in these animals,* than the carotid arteries. The nervous power is much lessened by tying them; and, in these experiments, the animal did not, in any case, survive the operation more than a fortnight; although I do not mean to say that recovery is impossible. In the dog, also, the carotids may be tied with little effect; but the vertebrales have a great influence.

The effect of the operation is, immediately to render breathing difficult and laborious, from the supply of blood to the phrenic nerves and the whole course of the *tactus respiratorius* of Sir Charles Bell being stopped. The animal becomes dull, and indisposed to use exertion or to take food.

Very slight injuries, after a ligature has been put upon these arteries, will destroy life; insomuch, that if they are first tied, even dissecting for the carotids, without tying them, will cause death. The best method, in such experiments, is to tie the vertebrales last.

On account of the importance of these vessels, they are securely defended by bone in the greater part of their course; and it is only below the sixth cervical vertebra that they are accessible. If they were exposed to pressure, death would often be suddenly produced.

These arteries are tortuous, to prevent too sudden a rush of blood to the head; and they pass through foramina of bone, which prevents any great increase of their size; although they become somewhat larger than before, when the carotid arteries are tied, and *vice versa*.

Thirdly, compression of the carotid and of the vertebral arteries at the same moment in the rabbit, destroys the nervous functions immediately. This is effected by the application of the thumbs to both sides of the neck, the trachea re-

* Mr. Coleman informs me that the vessels of the horse are different; and he thinks it is designed to counteract gravitation, when the animal is feeding on grass.

maintaining quite free from the pressure; when respiration entirely ceases, with the exception of a few convulsive grasps.

The same fact is evinced in a clearer and more satisfactory manner, by the application of ligatures on the four vessels, all being tightened at the same instant; when stoppage of respiration and death immediately occur.

When the dog is the subject of this experiment it loses its volition and sensation, and appears as if it were intoxicated; but the anastomosing vessels gradually restore the circulation by means of the other branches of the subclavian artery at the back and sides of the neck.

But, notwithstanding the decisive nature of the last experiment, conceiving that it might be possible that the pressure upon the nerves of the neck might have an influence in killing the animal suddenly, I made the experiments which I have detailed.

I first tried the pneumo-gastric nerves, and found that the animal lived about twelve hours, although it died on the instant when the carotid and vertebral arteries were tied: the lungs were also loaded with blood,* and twice as heavy as the healthy lung: it appears, therefore, that the change of the blood is either directly or indirectly under the influence of the par vagum.

In this experiment it is also to be observed, as a point of much importance, that the blood in the carotid arteries is found of a venous character, and dark blood circulates in the animal for some time before it dies, the blood being less arterial as the time elapses from the application of the ligature: yet the heart continues to beat; for when the artery is opened, the blood flows *per saltum*.

The blood also flows of a dark colour when the carotid is opened after the phrenic has been tied; but the lungs are not in that case found loaded with blood, but possessing their ordinary weight and appearance.

In this experiment there was also a remarkable diminution of animal heat. Is this to be attributed to a cessation of that pulmonary process, accompanied by the evolution of heat wherein venous is converted into arterial blood? or does it arise from a want of that supply of arterial blood to the nerves from which they derive a capability of evolving caloric? or shall we not approach still nearer to the truth, in supposing that both these causes of a high temperature are suspended at the same time; and that there is, consequently, a double reason for the gradual departure of the animal heat observed in this experiment?

The œsophagus contained food, in some instances in which the animal had eaten after the experiment, from its muscles being paralyzed; and the stomach was full, from the arrest of the digestive function.

This nerve, then, is most important; 1st, in assisting in the support of the function of the lungs, by contributing to the changing of the venous into arterial blood: 2ndly, in being necessary to the act of swallowing: 3dly, in being very essential to the digestive process.†

The pair of nerves upon which I next applied ligatures were the phrenics. As soon as these were tied, the most determined asthma was produced; breathing proceeded by means of the intercostal muscles; and the chest was elevated to the utmost by them; and in expiration, the chest was as remarkably drawn in. The animals did not live an hour; but they did not die suddenly, as they do from pressure on the carotid and vertebral arteries. The lungs appeared healthy; but the chest contained more than its natural exhalation.

When the grand-sympathetic was tied, little effect was produced: the animal's heart appeared to beat more quickly and feebly than usual; but of this circumstance I cannot be positively certain, on account of the natural quickness of its action. The animal was kept seven days; and one nerve was ulcerated through, and the other nearly so, at the situation of the ligatures. The suppurative process was extensively set up around the ligatures. No particular alteration of any organ was observed on examination. Another animal still lives in which the sympathetic was tied nearly a month ago.

Lastly, I tied all three nerves on each side the pneumogastric, phrenic, and grand-sympathetic; and the animal lived little more than a quarter of an hour, and died of dyspnœa.

The sudden death, then, that takes place from pressure at the sides of the neck

*Sir Benjamin Brodie has mentioned this state of the lungs.

† A ligature on one nerve only does not destroy.

must not be attributed to an injury to the nerves, but it is owing to the impediment to the due supply of blood to the grand centre of nervous influence.—*Guy's Hospital Reports*. No. III.

PATHOLOGICAL ANATOMY AND GENERAL PATHOLOGY.

7. *Enlargement and vicarious Function of the Stomach.* Professor BLUMENTHAL, of Charlcow (Ukrain Russia) has recorded in the *Wissenschaftliche annalen der gesammten Heilkunde*, a remarkable instance of this observed in a peasant 28 years of age, who died in the clinic of his town in 1835. The organ when filled with water after death was found to hold about 28 quarts (nearly 25 litres.) Its parietes were thickened, and its exterior surface as white as chalk. But what was more remarkable than its great capacity was that it appeared to have performed the function of the liver in secreting bile. This latter organ as well as the spleen were atrophied, and nature seems to have supplied its place by means of the stomach; for during life an enormous quantity of bile was ejected by vomiting, and after death eleven quarts of black bilious matter similar to that which had been vomited was found in the stomach, whilst only a very small quantity of clear bile was found in the contracted gall bladder.—*Gaz. Méd. de Paris*, Sep. 17, 1836.

8. *Minute Crystals observed on the Peritoneum of the Human Subject.*—Dr. ROBERT HARRISON, Professor of Anatomy and Physiology, has given an account in the *Dublin Journal*, for May 1836, of his discovery of numerous minute crystals on certain parts of the peritoneum of the human subject. "It is some time," he says, "since my attention was first accidentally directed to these, by the sensation which they gave to my hand, when removing some of the viscera of the abdomen, in the course of general dissection; I have since met with several examples, in all I should think about five or six, and in these the greatest similarity prevailed. The crystals, though extremely small, are very distinct, they are prismatic and exhibit clear and brilliant facets; before removal from the membrane they appear semi-transparent, not very unlike the colour of the peritoneum itself, hence they are usually detected by the touch rather than by the sight. They are principally to be found in the lower regions of the abdomen: in the first case I met they were in great abundance on the cæcal and iliac portions of the peritoneum; I have since found them in both iliac regions, as also in the inguinal fossæ, also along the course of the colon and the forepart of the rectum, but not on the bladder; I have seen a few on the mesentery, and on the terminating convolutions of the ileum intestine; but in all the examples I have met, they were most abundant in the iliac regions. I have not observed any on the stomach, liver, spleen, or duodenum, or on any part of the peritoneum in the upper regions of the abdomen; in the lower part of the cavity they were not confined to the visceral, though certainly they were more abundant on it than on the parietal portion of the membrane.

I cannot consider this condition of the peritoneum as a morbid one, although I believe it to be very unusual; in all those cases in which it had existed, the various contents of the abdomen appeared perfectly normal, so that I could not connect the presence of these crystals even with the coincidence of any diseased structure. In general, indeed I almost think always, I have found them in the bodies of females; the subjects were all apparently far advanced in years and much emaciated; in one case, the first I met, there was some serous fluid, about a quart, in the cavity of the abdomen: this at first led me to indulge in the speculation that this peculiar matter might have been a crystalline deposit from this fluid; an idea, however, which further experience and closer observation proved to be untenable, as in a short time afterwards I met with the same appearance in the abdomen where the surface of the peritoneum was unusually dry. On a careful examination, too, of these crystals, I found that they were not loose and unattached, so as to admit of being rubbed off, but, on the contrary, they were set very close together, and were intimately connected to the membrane by a very fine but still a resisting film, or a sort of albuminous pellicle, which was continued from the peritoneum over the base of the crystal, on which it was imperceptibly

lost; one might have almost fancied that these little crystalline prisms were impacted in the extremities of the exhalent vessels. In order to detach any of them it was necessary to scrape them off with the knife; on their removal, however, no orifices were observable in the membrane, and the latter appeared in a state of integrity, and free from any abrasion. When these crystals were removed and washed, they became perfectly transparent, their prismatic form and polished surfaces were then also very apparent. Having collected a sufficient quantity of them, I requested my friend Dr. Apjohn, Professor of Chemistry in the College of Surgeons, to submit them to analysis, the general result of which he has been so kind as to communicate to me.

Dr. Apjohn says, "the crystals being pulverized, were treated with caustic potash, which caused the evolution of ammoniacal gas, and left a flocculent precipitate, which, upon examination, proved to be magnesia. The alkaline solution, neutralized by acetic acid, gave with muriate of lime a white precipitate, insoluble in water, but soluble, without effervescence, in the muriatic and nitric acids. From these experiments it is obvious that the crystals were composed of phosphoric acid, ammonia, and magnesia." From this statement we may be disposed to consider these crystalline deposits of the ammoniaco-magnesian phosphate as somewhat analogous to what we more frequently meet with in the urinary passages, and which depositions are more prone to occur in very advanced life, indicating as it were, a sort of partial decomposition of the animal frame preceding its general dissolution. I shall not, however, at present attempt to speculate as to the proximate cause of these depositions, but shall only remark on the fact of their being, so far as we can yet learn, confined to the peritoneal or serous membrane of the abdominal cavity; I have never seen them in the pleuræ or in the pericardium; I once, and only once, met with a very slight trace of the same formation on that portion of the arachnoid membrane which covers in a very loose manner the cerebral protuberance or pons varolii, but the crystals were not in sufficient quantity to enable me to institute an accurate comparison. Finally, I may add that a short time since, when examining the head of a child about seven years of age who had died of hydrocephalus, and in which the arachnoid membrane on the inferior surface of the medulla oblongata was inflamed and thickened from tubercular deposit, I detected a small patch of the membrane to be in a very rough condition; this, on close examination, I perceived was partly owing to the presence of very distinct small short crystals of a brownish colour and which were intimately adherent to this diseased and thickened membrane; the quantity of these, however, was so very small, and the parts were so much disturbed and injured by the examination, that I was not able to institute any more accurate investigation as to their nature and properties; from their general appearance, however, as well as from all the concomitant circumstances, I should consider these as a totally different product from that which I have first described as found in the peritoneum.

9. *On the Occurrence of Crystals in the Intestinal Canal in Cases of Abdominal Typhus.* Professor SCHÖENLEIN of Zurich, in a letter to Professor MÜLLER states that while engaged in some researches on typhus abdominalis, for which a slight autumnal epidemic afforded sufficient materials, I have discovered some new facts, one of which I communicate to you, with a request, that you would be pleased to institute inquiries, with the view of confirming or extending it, in some of your large Berlin Hospitals, where examples of the disease are always to be met with.

"In the alvine evacuations of patients labouring under typhus abdominalis, a great number of microscopic crystals are observable; the forms of which I communicate in the accompanying sketch. Fig. 3 (a combination of a rhomboid prism, a rectangular pyramid, and a rectangular prism,) and Fig. 10 (a combination of a rhomboid prism, of a rhomboid pyramid, and of a rectangular prism), occur most frequently. Fig. 11 and 12 are aggregations of crystals (chiefly of the two foregoing descriptions) lying in the matter, for the crystals, without doubt, form in the yellow matter with which the excrescences of the intestinal mucous membrane (the pretended ulceration of Peyer's glands) are covered. I would be anxious to learn, whether you will find a larger number of crystals in Berlin, as those which I have figured were taken from about a dozen patients here. The

crystals are in other respects quite clear and transparent, very friable, soluble in muriatic and nitric acids without effervescence, and, as far as a cursory analysis goes, composed chiefly of phosphate of lime, with some sulphate of lime, and a salt of soda.

"The discovery of a peculiar system of crystals, formed during the morbid processes which accompany typhus, enlarges the circle of pathological processes, in a manner so much more pleasing to me, as by means of this new link in the chain of processes connected with the formation of crystals, it exhibits in a novel point of view the relation of the latter to the former, of which the characteristic and distinguishing marks are the formation of epi-and entoza, epi-and entophytes."

In a second communication, dated April 15th, 1836, Professor Schœnlein observes:—

"The cases of typhus abdominalis which still present themselves from time to time, have enabled me to continue my researches on crystals occurring in the intestinal canal, and have so constantly shewn the presence of these bodies, that the fact may be fairly employed as an important diagnostic between typhus abdominalis, and febris gastrica, and erysipelatosæ, diseases which are related to typhus, bear to it a deceitful resemblance, occur contemporaneously, and are also accompanied by copious alvine evacuations, in which, however, a minute examination fails to detect crystals, just as in the excrements of persons recovering from typhus.

"In various kinds of diarrhœa, as that which accompanies ulceration of the bowels in phthisis, and in the ordinary diarrhœa of healthy persons, these crystals cannot be discovered, although I, and some of my friends, have made hundreds of examinations, in some cases for weeks together.

"I am not as yet accurately acquainted with the form and chemical composition of these crystals; on both these points much still remains to be cleared up. Thus, Fig. 3, which is the form most frequently met with, appears to be merely the half of a crystal divided by a section which ran parallel to one of its sides. With respect to its chemical relations, it is remarkable that the shape differs from the primitive form of the crystals of phosphate of lime; to which may be added, the circumstance that the crystals of typhus are soluble not only in muriatic and nitric acids, but also in sulphuric acid with facility. Can phosphate of lime be a dimorphous substance? In this case the dimorphism would be (curiously enough) dependent here on the formative impulse; one form belonging to the mineral, the other to the animal processes of formation. I wish you would procure an accurate analysis of these crystals from some of your celebrated Berlin chemists."

On the foregoing communication Professor Müller remarks:

"At the time I received the first letter, typhus abdominalis was of such rare occurrence in our hospitals, that for a considerable time I could not meet with a pure case, that is to say with ulcerations of the ileum. Under these circumstances, it appeared to me the best course, to make some preliminary observations on the excrements in other diseases, and with this view I made a diligent microscopic examination of the excrements found in the bodies at the anatomical theatre. Professor Ehrenberg had long before discovered that meconium contains microscopic crystals, and I concluded from this, that similar crystals might probably be met with in the dead bodies of adults. In the excrements of adults, we have, after long searching, often found here a few scattered crystals, and these, I may observe, occurred in men who died of various diseases. Among them was a case of what has been termed nervous fever, without ulceration of the intestines, and another in which there were ulcers in the great intestine, but not in the ileum. The other cases had not the slightest connexion with typhus. The crystals, which were very few and scattered, were partly visible with the naked eye, and partly required to be examined with the microscope. We frequently observed rectangular tables, occasionally a rhomboid or rather rhombic prism; and in one instance, long four-sided prisms with quadrilateral pyramids at each end. We never met with aggregations of crystals adhering together as represented by Professor Schœnlein. In the non-typhoid cases, we have frequently sought for crystals in vain.

"Subsequently, I had an opportunity of examining the excrements of patients

who had been treated for typhus, and on one occasion, the excrements of a patient who died of typhus abdominalis with ulceration of the ileum. Although in these cases we did not meet with the crystals in a remarkably larger quantity, we do not lay much weight on the circumstance. In the dead bodies of patients who laboured under very different diseases, crystals may be found, which cannot be detected in the fresh excrements. But from the renewed observations of Professor Schœnlein, it appears, that crystals occur more frequently in the alvine evacuations of typhus than in any other kind of excrements."

10. *Cholesterine from an abscess.*—M. LASSAIGNE observed, that an abscess on his leg, which had burst, and discharged a bloody puriform matter, when dried was covered with small scales, like those of a fish. These scales possessed all the properties of cholesterine, being soft, soluble in hot alcohol, and melting at a high temperature. M. Caventou, in 1825, detected cholesterine in the pus discharged from an abscess above the malar bone.—*Journ. de Chim. Méd.* Nov., 1836.

11. *Remarkable instance of Deformity of the Pelvis.*—Professor NÆGELE of Heidelberg, recently presented to Dr. Montgomery of Dublin, a cast of the pelvis of a woman who was perfectly well formed, and gave birth to five full grown healthy children with the greatest facility. But being unfortunately attacked with malacosteon, and becoming again pregnant, at the close of gestation the pelvis was found so contracted as to leave no possibility of delivery except by the Cæsarean operation, from the effects of which the woman died, and the pelvis was found to present the greatest degree of contraction that has ever been known to require the interference of art.

In the dry preparation the distance between the promontory of the sacrum and the ramus of the pubes, is scarcely a quarter of an inch, so that when covered by the soft parts, these points must have been in contact. The greatest antero-posterior diameter at either side is only an inch and a quarter, and during life could not have exceeded an inch; the sacrum is bent in so as to form a right angle, and the ilia are folded or doubled in upon themselves, like softened pasteboard. Professor N. considers it "the most perfect specimen of contraction of the kind which has ever been made known to the profession."—*Dublin Journal*, Jan. 1837.

MATERICA MEDICA AND GENERAL THERAPEUTICS.

12. *Physiological action of Iodine and Hydriodic Acid.* By ANDREW BUCHANAN, M. D.—The effects of iodine on the animal economy have not been discriminated with sufficient care from those of hydriodic acid, although the two substances, considered as physiological agents, are just as distinct as chlorine and muriatic acid.

The physiological effects of iodine are exceedingly similar to those of chlorine. It acts as a corrosive irritant, exciting inflammation and combining chemically with the tissues to which it is applied. This simple local action is all that, strictly speaking, can be ascribed to iodine, for there is not the least reason to suppose that it is ever absorbed and mingled with the circulating fluids in the uncombined state. The other effects which have been ascribed to iodine are either those of hydriodic acid, or they are secondary effects arising from the inflamed or ulcerated state of the alimentary canal,—which the iodine has produced. To the latter series of effects must be referred the whole of the fearful train of symptoms which have been described by toxicologists under the name of *iodism*, and have been attributed, but most erroneously, to the slow accumulation of the poison in the body. This conclusion appears to me to be fully warranted by considering, that while such symptoms have been observed to result from the use of iodine in forms capable of exciting local irritation, it has been ascertained by numerous trials made in the hospital and out of it, as well by myself as by various medical friends who have done me the favour to state the result of their observations, that no such symptoms result from the use of iodine divested by starch of its local irritant power. Many of the symptoms, too, which have been described, such as indigestion, pains of the stomach and bowels, emaciation, and febrile excitement,

are of a kind very likely to result from gastro-intestinal irritation; and with respect to the rest of them it is difficult not to entertain a suspicion that some of them at least may have been admitted as effects of iodine from inaccurate observations. However that may be, I can only say, that I have never seen the use of iodine followed by wasting of the testicles or of the mammæ, by palpitations, faintness, excessive debility, hurried, anxious breathing, dinginess of the skin, copious clammy sweats, increased menstrual discharge, or an oily appearance of the urine, which are enumerated among the symptoms characterizing the supposed affection termed iodism. Some of the symptoms described, indeed—such as bilious diarrhœa, and a diminished secretion of the saliva, are the very reverse of the effects which I have usually observed to flow from the use of the preparations of iodine.

I go on to speak of the effects of hydriodic acid, which I think it does not admit of doubt ought to be regarded as the true medicinal agent, possessing the alterant virtues which have been ascribed to iodine itself. The hydriodic acid, in the concentrated state, is most probably, like the muriatic, a corrosive irritant, but by dilution with water it is completely divested of its irritant quality. In the diluted state, however, it is probably not without a local action on the alimentary canal. Most probably it acts as a tonic. At all events the analogy of the other mineral acids, in which tonic virtues are so generally recognised, warrants the opinion, as at least probable, that it is to the hydriodic acid that ought to be referred the tonic effects which so many observers have described as resulting from the use of iodine.

The hydriodic acid, whether prepared within the body or introduced ready made, is an exceedingly absorbable substance. When given in doses equivalent to ʒij. of iodine daily, the whole of it appeared to be taken up and mingled with the circulating fluids. What are the fluids with which it mingles, and the secretions by which it is discharged? I have already mentioned, that when hydriodate of potass is given in a dose of ʒij., iodine is found abundantly in the blood in from four to six hours afterwards. I must also, however, mention, that when iodine is given in smaller doses, although the use of it be continued for a great length of time, no iodine can be detected in the blood on the most careful examination. Mr. Lumsden, to whose kindness and analytical skill I have to acknowledge my obligations, examined both the serum and crassamentum in several patients taking iodine in full doses, and in many of whose secretions it was contained in abundance, without being able to detect any trace of it. How to explain these facts I do not know, unless we are to suppose that iodine does not find its way into the sanguiferous system unless when given in such a quantity at once that the system is completely deluged with it; but that when given in smaller quantities it is not admitted by the extremities of the veins, and is transmitted along the capillary vessels in a way which we do not at present understand. It will be seen immediately that the vessels of certain excretories appear to possess a similar power of rejection over this substance. I have already mentioned, that after giving a full dose of the iodide of potassium, iodine was detected in abundance in the serum exhaled into the serous cavities, and in the synovia of the knee-joint. Of the secretions, it was in the urine that iodine was always detected in greatest abundance. It appeared in the urine about four hours after the first dose was taken, and continued to be detected in it for four days after the last dose was taken. In one or two instances it was found on the fifth and even on the sixth day after. It continued to be observed for the same length of time whether the iodine was given in one large dose, or the body had been gradually impregnated with it. Next to the urine it was in the saliva that the iodine was most abundantly found. It was found also invariably in the tears, and in the mucus of the nose, although in the latter case it was impossible to determine whether it was really secreted by the schneiderian membrane, or came down from the lachrymal gland. Iodine was found also in the milk, but it existed in that secretion in a very small proportion compared with that in which it was found to exist simultaneously in the urine and saliva. Iodine was also found in examining the mucus secreted from the lungs in chronic bronchitis, but it was difficult to determine whether its presence was not owing to an admixture of saliva.

While the hydriodic acid is thus widely diffused over the body, it would be to generalise too hastily to infer that it exists in all the animal fluids. I have already

mentioned, that it is only in certain circumstances that it is to be found in the blood, and there are certain secretions the vessels preparing which appear constantly to reject it. At all events in none of the trials made could any portion of iodine be detected in them. Of these secretions or exhalations the first to be mentioned is the perspiration. I am aware that iodine is said to have been found in the perspiration, but I can only say, that in experiments carefully made and frequently repeated upon patients taking iodine in very large doses, and whose urine and saliva became as black as ink on being tested in the usual way, not the slightest trace of iodine could be detected in the perspiration. The perspiratory fluid examined in these experiments was forced out by the use of diaphoretics, or was collected from the forehead of the patient in the hot bath. At the same time the water of the bath itself in which the patient was immersed, was examined, but with no better success. It may, therefore, I think, be confidently affirmed, that iodine is very rarely, if ever, present in the perspiration. Another fluid, in which I very early looked for iodine, and fully expected to find it, was the purulent matter secreted from sores, for the cure of which iodine was exhibited, but in none of very numerous experiments made on patients fully saturated with iodine, could the slightest tinge of the medicine ever be perceived in the purulent discharges. The absence of iodine from the discharges from the skin, and from ulcerated surfaces, is rendered the more remarkable by its efficacy in the cure of cutaneous diseases, and various forms of ulceration. I have only to add further, that in one or two experiments, iodine was not found present in the serous fluid of blisters.

The whole of the hydriodic acid introduced into the body is discharged along with the urine, with the exception of the very small proportion of it contained in the rejected saliva and mucus of the nose, and milk, when that secretion is going on in the female. The greater part of the saliva being swallowed, the iodine contained in it must be absorbed a second time from the stomach and bowels. A similar reabsorption must take place of the iodine contained in the exhalations that are reabsorbed by the surfaces which effuse them. Thus, after describing many circuits, in various directions, through the body, nearly the whole iodine introduced comes ultimately to be discharged with the urine. The time occupied in this circuitous passage of the iodine is, as has been already remarked, generally four days.

Iodide of potassium is absorbed very readily from the skin: it is found in the urine just as when it is introduced into the stomach, but much less speedily.

With respect to the influence of the preparations of iodine we are here considering over the organs of digestion and assimilation, that influence was, to say the least of it, certainly not of an unpropitious kind; on the contrary, in patients employing these medicines in full doses, the tongue was almost invariably free from fur, and of a healthy red colour; the appetite and digestion were good, and in many instances there was a most obvious improvement in *condition*. Of the two great alterant medicines we possess, iodine and mercury, it is certainly a most important advantage of the former over the latter that it admits of being given freely, not only without injury, but with advantage to the general health; while mercury, given in full doses, is always a dangerous medicine, and often the means of doing irreparable injury to the constitution. The iodide of starch frequently caused costiveness, attended with griping pains of the bowels; and, as was observed in many instances, with a paleness, approaching to a clay colour, of the alvine discharges.

These effects I was inclined to refer to the large quantity of hydriodic acid generated in the stomach, abstracting the free soda from the bile, and probably otherwise modifying its qualities, besides, perhaps, exerting a direct astringent action on the bowels themselves. The occurrence of these symptoms required the use of a laxative. In some cases, but very rarely, the iodide of starch produced the opposite effect of causing purging. In persons of weak digestion, it was often necessary either to give up the medicine altogether, or at least to diminish the dose of it, owing to the occurrence of pain in the stomach. It is possible that the conversion of iodine into hydriodic acid requires a certain vigour of digestion; and if so, the pain occurring in such cases may have been owing to the imperfect mode in which the process of conversion was carried on.

A question has of late been agitated—Whether iodine ever causes salivation?

It does not, according to my observations, generally do so; but that it does so occasionally, I think there can be no doubt. In a man who had taken 2864 grains of iodine in the course of 42 days, in the form of iodide of starch, the medicine required to be given up on account of salivation, which was as profuse as I ever saw caused by mercury, and attended with swelling of the face and ulceration of the inner membrane of the mouth. It only differed from a mercurial salivation in being much less obstinate, going off as soon as the iodine disappeared from the saliva. I never saw this symptom occur to the same extent in any other case, but I have repeatedly seen it in a less degree. The man in whom it took place had been frequently salivated with mercury on previous occasions.

In several cases the pulse was accelerated when the system was impregnated with iodine; in many other cases no acceleration could be perceived. Upon the whole, one of the most remarkable circumstances attending the use of this medicine was the absence of symptoms produced by it. Patients who took the largest doses went about, and took their food, just as usual; so that had it not been for the peculiar chemical condition of their secretions, and in many instances the rapid disappearance of their diseases, it would not have been supposed they were taking medicine at all.

With respect to the relative efficacy as medicines of the iodide of starch, hydriodic acid, and iodide of potassium, I am inclined to place them in the order in which they have just been enumerated; although I must admit that the superiority which I ascribe to the first is perhaps owing to my having prescribed it most frequently. The action of all of them, however, is very similar. The only mode of explaining the similarity of action on the body of substances so dissimilar in nature, is by considering the hydriodic acid as the active principle, producing the physiological and therapeutical effects usually ascribed to iodine. It has been already stated, that free iodine is immediately converted in the stomach into hydriodic acid. As to the hydriodate of potass, it is clear that in its passage through the body the muriate and phosphoric acids must lay hold of the potass, so that the hydriodic acid will combine with the weaker bases, the soda and lime, and thus pervade the system nearly in the same state as when free hydriodic acid itself is employed. The presence of the potass, however, must produce an important difference in the action of the hydriodate, which I have no doubt a more attentive observation will hereafter enable us to discriminate.

If the hydriodic acid be the active principle to which the alterant virtues ascribed to the preparations of iodine are to be attributed, analogy will lead us to range those preparations in the series of medicinal agents along with the muriatic, the sulphuric, the nitric, and other mineral acids,—all of which have been held to possess alterant virtues, and have been used on that account in syphilis and other diseases; and the great success which has attended the use of the hydriodic acid may serve as an inducement to try the other mineral acids more extensively, and in fuller doses, than they are commonly prescribed.—*Med. Gaz.* July 2, 1836.

13. *On the Therapeutic value of extracts of the Solanea containing Green Fecula.* By MM. MARTIN-SOLON and SOUBERAIN.—Extracts prepared from juices which have not been purified, and containing consequently the green fecula of the plants, have been recommended by Störck, and generally considered as useful medicines. In the greater number of plants, what is improperly called green fecula consists of a mixture of chlorophyle, of coagulated gluten, and of the debris of tissue,—substances of no medicinal value; but it would be wrong to conclude on this account that the green fecula of *all* plants is useless: it, however, may be doubted whether the opinion of those pharmacologists is correct who consider this fecula as the only active part of this family of plants, and do not hesitate to substitute it for the extract itself. MM. M. and S. have made experiments on the properties of the green fecula of belladonna, hyoscyamus, and stramonium, in order to determine whether it is a necessary ingredient in the common extracts, or if it could be separated without injuring their virtues. The experiments were made with two kinds of green fecula; the first, which may be called the insoluble matter of the juices, is that which is held in suspension after the tissue of the plant has been broken down, and been submitted to expression. It was collected by filtering the juice, and purified by several washings. The second kind, which is called green fecula, obtained by coagulation, is procured from the filtered juice after it has

been heated. It contains, in addition to the ingredients composing the first species, albumen which is coagulated by the heat, and some matters entangled by the albumen during coagulation. In order to divide the doses equally, the fecula was, when still moist, mixed with sugar, and then dried in a stove.

Insoluble Green Matter of Belladonna. This was given to two patients: the first was a woman of sixty, with catarrh and chronic gastritis; one grain was given the first day, and the dose increased one grain daily. On the tenth day, the patient complained of muscæ volitantes: the dose was increased to fourteen grains without its producing any peculiar symptom whatever. The second patient was a woman, æt. thirty-two, convalescent from articular rheumatism: the dose was gradually increased to twenty grains, and no effect produced.

Green Fecula of Belladonna obtained by Coagulation. The first patient was a woman, æt. twenty, affected with rheumatic pains. Two grains were given at first, and the dose increased two grains daily. At fourteen grains, she complained of pain in the throat; she slept well, but dreamed more than usual, and had occasional spasms of the legs. When the dose was sixteen grains, she suffered much from her throat; her dreams were sad and frightful; her head heavy, pupils dilated, pulse regular; no rheumatic pains. The medicine was discontinued, and on the following day these symptoms entirely disappeared. The second patient was a phthisical young man of twenty: on taking twenty grains, he complained that his sleep was less tranquil than usual; no other symptom. In a third patient, æt. forty-four, phthisical, pain in the throat was complained of after taking ten grains; after fourteen, the pain increased, with slight headach; after sixteen, there was slight trembling of the hands, but the sleep was quiet. This tremor increased on augmenting the dose, and the medicine was discontinued.

Insoluble Green Fecula of Hyoscyamus niger. One trial was made in a young man, æt. twenty-two, convalescent from pneumonia. After taking twelve grains, he found some weakness of vision; his sleep was a little agitated.

Green Fecula of Hyoscyamus obtained by Coagulation. The patient was affected with habitual headach: dose augmented daily two grains. After taking ten grains, his sleep was disturbed; after fourteen grains, he slept more, but he complained of uneasiness in his legs; eighteen grains produced nausea, heaviness of the head, sleep disturbed by dreams. The medicine was omitted, and the day afterwards these symptoms ceased.

Green Fecula of Stramonium. Both kinds were given to the patients, and the dose carried to twenty grains, without any effect.

From these experiments, it may be doubted whether the green fecula which is left in the extracts of the plants with the juice can add to their efficacy: indeed, it is a question whether their activity may not be impaired by the mixture of the active principle with so much inert matter. It is not unreasonable to conclude, that the slight effects in some of the experiments were owing to a part of the soluble principles of the juices remaining mixed with the green fecula, particularly as the coagulated fecula was the most active, which was washed with less effect. These experiments, however, are not sufficient to decide the question. Störck prepared his extracts with a heat so gentle as not to injure the juices, instead of evaporating them, as was the general custom, by prolonged ebullition, to the great injury of their active ingredients. This may account for the success he and others experienced.—*B. & F. Med. Rev.* Jan. 7, 1837, from *Bull. Gen. de Thérap.* Feb. 7, 1836.

14. *Hydriodic Acid.*—Dr. ANDREW BUCHANAN gives the following formula as that according to which the liquid hydriodic acid is prepared in the Glasgow Royal Infirmary; ℞ Iodidi Potassii, grs. 330, Acidi Tartarici, grs. 264.

Solvantur seorsim in Aquæ destillatæ, ℥iiss. Misceantur solutiones et quum subsederit Bitartras Potassæ cola. Colato adde aquæ quantum sufficiat ut sint totius liquoris drachmæ quinquaginta, 3L. = ℥vi. 3ij.

Acidum hoc Hydriodicum liquidum, habet Iodinii, gr. v., in singulis drachmis.

It is a fact well known to physiologists, says Dr. B., that when free iodine is introduced into the stomach, it is speedily converted into hydriodic acid. This conversion is probably effected differently in different cases. If a large quantity of uncombined iodine be swallowed when the stomach is empty, the hydrogen with which it combines may be furnished in part by the gastric juices, but it can

scarcely be doubted that it is chiefly supplied from the tissues of the stomach itself, which undergo corrosion. When, however, the iodine is given in combination with starch, it is probable that the starch, while under digestion, furnishes the hydrogen which goes to form the hydriodic acid, and in this way the starch defends the tissues of the stomach from the corrosive action which they would otherwise undergo. It appeared to me, however, that it would be well to save the stomach the labour of preparing the hydriodic acid, by giving, for the purposes of medicine, not free iodine, but the hydriodic acid itself.

I was the more inclined to make this experiment, as it would enable us to determine, from direct evidence, whether the opinion, rendered so probable by general reasoning, be also borne out by experience, that hydriodic acid closely resembles iodine in its effects upon the body, and is in reality the active principle to which the ordinary preparations of iodine owe their medicinal efficacy. The trials made of the hydriodic acid as a medicine fully realized the expectations entertained of it.

The processes recommended in works upon chemistry for forming hydriodic acid are not well adapted for the purposes of medicine, both on account of their complexity, and because they do not yield an acid of which the strength is uniform and easily estimated. The strong mineral acids cannot be employed in decomposing the iodides to form hydriodic acid, as is done in forming muriatic acid from common salt, because those acids re-act on the hydriodic acid as it is generated. The tartaric acid, however, is not liable to the same objection; and I found on trying the experiment of treating iodide of potassium with tartaric acid, in the proportions necessary to form cream of tartar, that hydriodic acid was readily obtained in a state of sufficient purity for the purposes of medicine, although holding some cream of tartar in solution. To diminish as much as possible the quantity of cream of tartar dissolved, the acid and salts are each dissolved in a very small quantity of water, the rest of the water not being added till the precipitated cream of tartar has been removed by filtering. The liquid acid thus obtained has an agreeable sourness. It is at first limpid, or with only a slight yellow tinge; but as happens to this acid, in whatever way prepared, on being kept it soon assumes first a wine yellow, and next a beautiful red colour, from a portion of the acid undergoing decomposition, while the iodine disengaged is dissolved in the rest of the acid. It has been ascertained that this process of decomposition may go on till one-half of the acid is decomposed, when the colour of the liquid is a very dark red, approaching to black. The diluted acid, however, prepared as above, may be kept many months without at all approaching this limit.

The liquid hydriodic acid thus prepared I first tried as a medicine in the dose of a few drops. That dose was gradually increased to ʒj. three times a day, equivalent to gr. xv. of iodine, and at length to ʒss. three times a day, equivalent to ʒj. of iodine. This last was the ordinary dose in which I exhibited the medicine, although I have given as much of it as ʒj. three times a day, or ʒij. of iodine daily. The acidity of this medicine renders it one of the most agreeable preparations of iodine. The results obtained from numerous trials of its effects were—1st, That the hydriodic acid, if pure (by which I mean, not holding iodine in solution), has no local irritant action if sufficiently diluted. 2nd, That it is absorbed, and pervades the tissues of the body, and comes out with the secretions in the very same way as when free iodine is exhibited. 3d, That its therapeutical virtues are like those of free iodine.

The pure liquid hydriodic acid, having no irritant action unless in a state of concentration, may be safely given in water as a vehicle. When, however, the acid has undergone decomposition, the iodine dissolved renders it irritant, forming a preparation perfectly analogous to Lugol's solution, of which it has been already stated that only a small dose can be given without inducing symptoms of gastric irritation. I always, therefore, adopted the precaution of giving hydriodic acid in a solution of starch as a vehicle. But for this precaution, owing to the great proneness of the acid to undergo decomposition, it would prove a very dangerous medicine for continued use. By using the starch as a vehicle, however, it is rendered perfectly safe, for the iodine of the decomposed acid combines with the starch, and thus the portion of the medicine which is not given as hydriodic acid is given in the equally innocuous and efficacious form of iodide of starch. Neither is it necessary, in prescribing, to make any allowance for changes in the

strength of the acid from decomposition, for the part of it which has been decomposed is immediately reconverted into hydriodic acid on being introduced into the stomach.—*London Med. Gaz.*, July 2, 1836.

15. *Iodide of Potassium*.—Dr. Buchanan says he has given this substance in doses of half an ounce, and the only precaution he observed was to make the patient drink freely of diluents. “No pain of the stomach or bowels was,” he says, “produced, and the medicine never in the least degree operated as a purgative, but seemed to be altogether absorbed, and was discharged chiefly by the kidneys.

As the iodide of potassium is very often adulterated, it is necessary, to prevent any suspicions from arising in the mind of the reader as to the purity of the medicine employed, to state, that the iodide of potassium used in the Glasgow Infirmary is prepared under the direction of a most able chemist, within the walls of the hospital, where there can be no motive to adulterate it.

It was not merely for the purpose of determining the dose of the hydriodate of potash that these large quantities of it were given. I found that to give it in such doses was the readiest mode of determining certain physiological questions with respect to the diffusion of this medicine over the body; for so large a quantity of it being at once introduced into the system, every fluid into which it is permitted to enter is at once impregnated with it. It is in this way that it is most easily detected in the blood. Two drachms of it were given to a young man affected with gonorrhœa, and as soon as the medicine made its appearance in the urine, which was four hours afterwards, blood was drawn from his arm. On examining the blood, both the serum and crassamentum were found deeply impregnated with iodine. The same dose was given to a boy affected with dropsy of the knee-joint, from which it had been resolved to draw off the fluid. About five hours after the dose had been taken, a very small puncture was made into the joint, and upwards of twelve ounces of synovia drawn off by the cupping-glass. The synovia contained iodine in abundance. To an old man who had one of the largest hydroceles I ever saw, two drachms of the hydriodate of potass were given over night, and the same quantity the following morning. On tapping him some hours after he had taken the last dose, fully more than thirty ounces of serum were discharged, containing a large quantity of iodine.—*Ibid.*

16. *Results of experiments with Kreosôte*.—Dr. J. CORNELIANI, Professor of Internal clinic in the University of Pavia, has investigated the powers of the kreosote experimentally, both in his clinic and on several species of animals. He has employed it, internally, endermically, and finally by injection into the veins; and has varied the dose from the smallest to the highest. The following are his results:

1. Kreosote taken internally, in a large dose, may produce instantaneous death, without any organic lesion being observed on post mortem examination, if made immediately.

2. When pure or very slightly diluted kreosote is applied directly to a larger nerve, as the par vagum, or it is injected into a vein even in small quantity, death instantly follows.

3. If the quantity is not sufficient to produce death, it causes prostration of the muscular and nervous systems; and symptoms of paralysis of the extremities, heart, diaphragm and organs of the senses, which leads to the belief that the kreosote acts like the narcotic debilitants, among which it should be arranged.

4. Although no antidote has yet been indicated against its toxicological effects, it appears that general stimulants are indicated, unless it has acted upon the stomach, in that case the debilitants, and especially narcotics, as the prussic acid, increase its fatal effects.

5. The kreosote also exerts more or less active mechanico-chemical action, on the gastro-enteritic mucous membrane, which gives rise to various organic lesions met with in the dead body, and to chronic gastro-enteritis in which persons are subject who make use of this article for a long period.

6. To counteract this mechanico-chemical effect produced by the kreosote taken internally, oleaginous and mucilaginous drinks should be administered. Vinegar being an excellent solvent of this substance—prevents its deleterious effects by favouring its contact with the nervous papillæ of the stomach.

7. In general patients cannot bear a larger dose than two drops, repeated four or six times in the 24 hours.

8. Kreosote taken internally, may be useful in diabetes mellitus, polydipsia, hemoptysis, chronic catarrh, diarrhœa, palpitations of the heart, inflammatory fevers (*angiotenies*) and perhaps also in tetanus.

9. A singular effect of the kreosote taken internally appears to be its prompt action on the urinary organs; for the animal experimented on, urinated as soon as he took it. Dr. Corneliani ascribes this to the paralysis it causes, especially of the neck of the bladder.

10. The application of kreosote to the exterior in chronic inflammations of the skin, and especially in herpes (dartres), itch, chronic psoriasis, may be often useful, whether its action is drying, antiphlogistic or insecticide.

11. If the kreosote used externally is not applied to a large surface or upon important nervous branches, it produces no alteration of the organs, even of those upon which it more especially acts, as the spinal marrow, the brain and the kidneys. Dr. Corneliani has however observed that in phthisical patients, the inspiration of the kreosote may give rise to prostration of the intellectual functions and muscular movements.

13. If the external employment of the kreosote does not arrest venous hemorrhage, at least that of a large vein, as the femoral of a sheep, it is efficacious in hemorrhage from an artery of moderate size.—*Journ. de Chimie Médicale*, Feb. 1836.

17. *Iodide of Starch*.—Dr. ANDREW BUCHANAN, Junior Surgeon to the Glasgow Royal Infirmary, in a communication in the *London Medical Gazette* (2 July, 1836) extols this preparation of iodine, which he prepares in the following manner:—℞. Iodine gr. xxiv.; Amyli in pulveren tenuissimum triti ʒj. The iodine is first triturated into a little water, and the starch gradually added, the trituration being continued till the compound assumes a uniform blue colour. The iodide is then dried with a heat so gentle as not to drive off the iodine, and it must be afterwards kept in a well stopped bottle.

The iodine, in the usual forms of exhibition, cannot in general be safely given in larger doses than four or six grains daily; whilst in the above formula Dr. Buchanan has given as much as 72 grains daily. Dr. Buchanan is in the habit, in persons not labouring under dyspepsia or constitutional delicacy of habit, and whom he wished to put under the influence of iodine, of commencing with the iodide of starch in doses of half an ounce three times a day, and increasing it immediately afterwards to ounce doses if necessary. "As there is no great reason," he observes, "for nicely apportioning the doses, a heaped tea-spoonful, dessert-spoonful, or table-spoonful are convenient enough measures for smaller quantities in private practice. I have always directed the medicine to be taken in a draught of water gruel."

It might rationally enough be supposed from the large doses in which the medicine is administered by Dr. Buchanan, that it is an inert preparation, but such seems not to be the case, as Dr. B. has detected the iodine abundantly in the secretions, showing it to be absorbed; and has been unable to detect any traces of it in the stools of patients taking it in large doses. It certainly must exert a less irritant action on the alimentary canal than the other preparations of iodine, but it may be a question whether it will be possible to induce patients to persevere in a medicine requiring to be given in such large doses, making a meal rather than a medicine!

18. *Action of Acetate of Lead upon Animal matter*.—Dr. C. G. MITSCHERLICH has instituted a series of experiments on this subject, the results of which are of the highest value in therapeutics. As soon as acetate of lead in solution comes in contact with animal matter, new compounds are formed, which contain lead and an organic substance. Some of these compounds are soluble in water; others can be rendered soluble by the addition of a small quantity of acetic acid, lactic acid, or chlorohydric acid, while others are quite insoluble in water and in acids. As most of the compounds which sugar of lead forms with the constituents of animal organic matter are very little or not at all soluble in water, poisoning by lead in all those parts of the body which do not abundantly secrete acids, can only take

place slowly or not at all. Wounds and ulcers are in the same predicament in which a general action of the lead is exhibited, as soon as the acetate of lead decomposed by albumen, and dissolved in acetic acid, is brought in contact with them. The parts are acted on by the acetate of lead, but the oxide of lead remains in its new state of combination, wholly, or for the most part, undissolved.

The acetate of lead in the stomach or on a secreting surface, accumulating, is first decomposed by the secretion and the contents of the organ on which it has collected. This we ascertain by means of large and small doses, and can perform the experiment with safety when it is made with combinations of salts of lead and organic matter.

Acetate of lead passes in the stomach when it is decomposed by the constituents of the secretions, and its contents partly into combinations soluble in water, but the greater portion remains as an insoluble combination with the mucus. The dissolved compounds are partly of themselves dissolved by water, and partly are brought into solution by the free acids of the stomach, chlorohydric and lactic [?] acids.

Acetate of lead, when it is not completely decomposed by the constituents of the secretion, presents two series of appearances, viz. the direct corrosion of the organic surface of the mucous membrane, and new soluble compounds of lead with organic matter. If it is on the other hand completely decomposed by the secretion, the last appearance only occurs, which is produced when we combine the acetate of lead with albumen, dissolve it in acetic acid, and poison an animal by this compound.

The corrosion which the acetate of lead produces in the stomach depends upon the affinity of this metallic salt to the constituents of the mucous coat, and the deteriorated portions of the mucous coat are in a similar condition to other organic surfaces which are corroded by acetate of lead, for example, ulcers. The scurf formed is of a white colour, partially dissolves mechanically, partially is decomposed by the contents of the stomach, or passes out along with the fæces. The parts injured are similarly affected to an ulcer when it is corroded by acetate of lead; no inflammation is produced, but either a rapid cure or an ulcer. The direct corrosion of the living surface hastens death. But if the acetate of lead is decomposed before its contact with the organic surface, the peculiar poisoning by lead alone follows. This is also occasioned by the combination of the salts of lead with animal matter dissolved in muriatic and lactic acids. But we can produce it more certainly when we decompose acetate of lead with albumen, dissolve it in acetic acid, and poison by this solution.

Thus far are the appearances of the action of lead cleared up. But to expose the subsequent symptoms, it is necessary to examine the chemical properties of these new compounds among each other; their chemical action, and their relation to the different solid and fluid parts of the organism. Besides a much more intimate knowledge of the composition of many animal structures than we at present possess, is requisite. Such an examination is scarcely practicable with our present methods of investigation. The solution of the new compound in acids acts chemically. This has been ascertained after death, both in the stomach and in wounds.

The chemical examination of the blood and urine shows that the blood, in cases of poisoning, after death contains very little or no lead, and that no lead is discharged with the urine; that a combination takes place in the blood is very probable, because the symptoms in the living body are not of the kind which can be attributed to injury of the nerves. The symptoms proceed slowly, and increase in proportion to the chemical action. All symptoms on the contrary, which proceed from any of the nerves, follow rapidly, almost immediately.

Gaspard's experiment with 2 grains of sugar of lead introduced into the jugular vein is an illustration of this.

The appearances during life agree with those after death, and clear up, in a great measure, the action. An interruption in the functions of the intestinal canal, of the lungs, kidneys, and of nutrition, is more or less evident in experiments. The large intestines are usually empty. In dogs, we can easily excite a sanguineous extravasation in the whole of the intestinal canal. In rabbits, this exudation of blood is observed in different places. It is observable especially in the cavity of the abdomen, in the sac of the pleura, and in the urine. In one case it

was observed between the outer membrane and the cortical substance of the kidneys. The organs in which this extravasion appears only undergo a change of structure, in so far as the vessels are filled with blood and the structure appears red. In the intestinal canal it is only the interior vessels which are affected. We sometimes find much blood in the large vessels under the peritoneum which covers the intestinal canal, but no inflammation.

If blood is extravasated in the sac of the pleura, the lung is darker than usual, but not soft and hepatized. In bloody urine the kidney is never softer, but darker than usual, and we find the cortical substance and the interior of the kidneys as far as the papillæ more or less coloured, by which we know that the vessels are filled with blood. We have in this case a similar appearance to that which is exhibited in dogs in the intestinal canal; in rabbits, in different organs, sometimes in one, sometimes in another, but especially in the kidneys; this redness of the organs occurs in different degrees, sometimes accompanied with extravasation of blood. Orfila and others have considered it inflammation. Gaspard calls it a slow, peculiar kind of inflammation. But this redness is not an inflammation, as the structure is not softened, and we do not find the capillary ramiform and point-like injection which characterizes true inflammation. The symptoms during life also are not inflammatory. The only symptom of fever is constant thirst. This redness which occurs in poisoning by many other metals, is probably produced by a decomposition of the blood. An engorgement of the vessels with blood takes place in the secreting organs. The external appearance of the blood also strengthens this idea. It has a peculiar colour, and is strongly coagulated; the blood globules are very dark, and the fluid part is more or less considerable, according to the manner in which the thirst has been appeased during life, but always possesses a peculiar red colour, and often contains mucus (*schleimig gefunden*.) These external appearances point out an alteration in the blood, although chemical and microscopical examinations exhibit no substantial changes. The redness does not prove the existence of inflammation, but only an engorgement of the absorbents, in consequence, probably, of the decomposition of the blood. The cause of the extravasation of blood in the intestinal canal from poisoning by wounds, by the veins, and by the stomach, is not yet ascertained. We must rest contented with the fact. The difficulty of respiration is accounted for by the *post-mortem* appearances. The lungs are found to be very dense after death, with some dark coagulated blood in the capillary vessels, almost without serum and air. This is less distinct when the poison has acted through a wound; in a stronger degree when a solution of sugar of lead in large doses has been introduced into the stomach. The function of the kidneys is essentially changed. The excretion of urine is greatly increased, and in proportion to the thirst. The urine is clear when the poisoning has been gradually produced by small doses, but it becomes milky and even bloody when the poison doses have been large. In the latter case we find the vessels of the kidney more or less filled with blood. In very large doses, which have strongly corroded the intestinal canal, a change in the urine occurs more seldom. From these appearances we may presume that injurious matter is separated from the blood with the urine, more especially as the animal recovers itself after such evacuations, and we may consider the thirst as a requisite for supplying the waste. This deduction however is not proved, as no such chemical matter has been detected in the urine. The liver and spleen only exhibit alterations in colour, which depend on the infiltration of blood. The brain exhibits no change, but the activity of the spinal marrow is often interrupted; and we find frequently paralysis of the posterior extremities. No remarkable changes are perceptible in the spinal marrow after death. The whole of the body of the animal is, after death, emaciated. This is easily accounted for by the great evacuations from the kidneys, &c.

From these results of experiments upon the physiological action of acetate of lead, it is obvious that the facts observed are of importance in a practical point of view.—*British Ann. Med.* 17 Feb. 1837, and *Müller's Archiv. fur Anat. Phys.*, &c. No. V. 1836.

SPECIAL PATHOLOGY AND SPECIAL THERAPEUTICS.

19. *On Gastralgia*.—Dr. H. C. LOMBARD, Physician to the Civil and Military Hospital of Geneva, has treated a great number of cases of gastralgia by the *nitrate of bismuth*, and he has almost always obtained a remarkable amelioration of the disease, if not a radical cure. Gastralgia with or without vomiting promptly yields, Dr. Lombard says, to the administration of bismuth; the pains and vomiting which accompany cancer of the stomach are also calmed by the same remedy, although the progress of the disease is not arrested; but it is a great advantage to give relief even if we cannot cure.

Efficacious as is the bismuth in gastralgia, cases sometimes occur which will not yield to this medicament. In some of these Dr. L. has found the *oxide of zinc* to succeed. This substance may be administered in the dose of from six to twelve grains in the twenty-four hours. Its action Dr. L. considers very similar to that of bismuth, viz: exercising a sedative influence on the pneumogastric nerves. The zinc, he thinks, particularly indicated in gastralgia, symptomatic of leucorrhœa; and, he says, that in females afflicted with this complaint, the pains in the stomach are remarkably relieved by the zinc combined with some narcotic extract, as the lactuca virosa, the cicuta or opium.

Alkalies sometimes succeed when the metallic sedatives fail. The sub-carbonate and bicarbonate of soda exert a very favourable influence in cases of pyrosis and acid vomiting; they are also very useful in that form of gastralgia caused by a deficiency of the salivary secretion. Persons afflicted with this form of the disease have great dryness of the mouth, and experience an urgent necessity for drinking copiously to aid mastication, and afterwards digestion. In these cases the alkalies in the form of soda water, &c. succeed very well. The sub-carbonate of magnesia, lime water and the solution of caustic potash fulfil the same indication in all cases where acidity is the predominant character of the gastralgic symptoms. The solution of caustic potash in doses of a few drops in an aromatic vehicle often succeeds when the other medicines have failed; its action, Dr. L. considers as both chemical and tonic, and this double property renders it highly valuable in a number of cases where the acid secretion results from debility which can be alone relieved by tonics.

Some cases of gastralgia of long continuance, in which bismuth, alkalies and antispasmodics failed to afford relief, Dr. L. has treated successfully with *warm water*, drank in large quantities, and as hot as the mouth and œsophagus could bear. He has found this remedy to succeed particularly in females, whose menstruation was irregular and scanty, and also often in those labouring under profuse leucorrhœa. He gives at first seven or eight ounces of the hot water, and repeats the dose two, three, four, and even eight or ten times during the day, and principally when the pains come on. Fulness of the stomach does not contraindicate the ingestion of the water. He has continued this remedy several weeks without the stomach appearing enfeebled by the ingestion of so large a quantity of liquid, for not only have cases of gastralgia which had resisted for several years every other treatment, yielded to this remedy, but the digestive functions have resumed their activity so that the patients have acquired flesh and strength.

Relapses of gastralgia are often induced by mental causes, and here Dr. L. recommends the *antispasmodics*, as æther, valerian, assafœtida, and particularly the animal oil of Dippel in the dose of eight or ten drops a day in form of pills.

Purgatives sometimes relieve cases of gastralgia which have resisted other remedies. In young girls affected with chlorosis and scanty menstruation, the bitter purgatives, and particularly aloes, afford great relief to the gastralgic symptoms. They are also useful when the disease results from atony of the liver.

Gastralgia sometimes results from an atony of the muscular fibres of the stomach, and in these cases digestion is imperfect and remarkably slow. In these cases Dr. L. recommends the *nux vomica*, either in extract or tincture: one or two drops of the latter is often a sufficient dose.

Gastralgia is sometimes occasioned by an exalted nervous sensibility of the stomach, which makes the contact of the food not only painful but sometimes

unsupportable, whence result the pain and vomiting which follow immediately after a meal. A few drops of laudanum taken with the first mouthful of food often affords relief, acting as a calment to the mucous membrane.

External applications, both irritating, as sinapisms, blisters and moxas, or sedative, as morphia, and prussic acid, are useful in some cases of vomiting and cramp of the stomach. Revulsives to the skin are a valuable resource when other methods of treatment have failed or are too slow in their operation. During the violence of the pain, sinapisms are useful, but to effect a cure, blisters to the epigastrium are most efficacious, especially if they are kept discharging for some time. Dr. L. has seen some very obstinate cases cured by this application. He has also derived benefit from the same application to the neck, especially in those cases which appeared to him to depend upon a morbid condition of the brain, or pneumogastric nerves. He considers this also the best remedy for spasmodic affections of every description.

The application of antispasmodics and narcotics to the epigastrium often, according to Dr. L., relieves the most violent attacks of gastralgia. A plaster of assafœtida he considers very useful, and frictions with a solution of morphia or cyanuret of potassium still more so; six to twelve grains of either in three ounces of water.

Regimen is not to be neglected in the treatment of this disease. All indigestible food must be avoided and the diet should consist of meat jelly, farinaceous articles and eggs. There are some cases of vomiting which will not yield to any medicament, and which are relieved by milk, given a tea-spoonful at a time and repeated every quarter of an hour. Ice, the effervescent mixture and gaseous water are also useful. The white of an egg with water, Dr. L. regards as a most valuable drink in this disease. Finally, change of air, especially to elevated situations, has been found eminently useful by Dr. Lombard.—*Gazette Médicale de Paris*, December 10, 1836.

20. *Chronic Gonorrhœa cured by Nitrate of Silver.*—M. ROGETTA has recorded in *La Lancette Française* (31 March, 1836) a case of Gonorrhœa of two months and a half duration, which had resisted the usual remedies, and was cured in four days by injections of nitrate of silver, one fourth of a grain of the salt dissolved in one ounce of water, repeated twice daily.

21. *Condition of the pneumogastric nerves in phthisis.*—Professor Schœnlein, in an account published some years since of his researches relative to the condition of the pneumogastric nerves in phthisis, states that he found these nerves tumefied in a portion of their extent, in about a third of the subjects he examined. Dr. LOMBARD of Geneva, has endeavoured to verify this statement, and although he has examined with this view more than thirty phthisical patients, he has never met, in a single case, with tumefaction or morbid colouration of these nerves.—*Gaz. Méd. de Paris*, 10 Dec. 1837.

22. *Lactic Acid in Dyspepsia.*—MAGENDIE believes that lactic acid will be found useful in Dyspepsia; he has been led to this from the properties it possesses of acting upon animal matter and speedily dissolving phosphate of lime. He prescribes it in the following form: R. lactic acid (sp. gr. 1.21) 1 to 4 drachms; water 32 oz.; syrup 2 oz.

23. *Alum in Gonorrhœa.*—Dr. FREDERICK of Leipsic, has long employed alum in the inflammatory stage of the above disease in the following form: crude alum from 1 to 2 drachms; distilled water, 6 ounces; liquorice juice, 1 oz.; of this a table-spoonful is to be taken three times a day. After some days, the pain in micturition diminishes, and erections become less frequent.—*B. Ann. Med.* 3 March, and *Kleinert's Repertorium*.

24. *Acetate of Lead decomposed by Carbonate of Soda in the Diarrhœa of Phthisis.*—M. ALPH. DIVERGIE has found this article very efficacious in arresting the colliquative diarrhœa, which so rapidly brings on the fatal termination of pulmonary phthisis. He prescribes it in the following manner: two grains of the neutral acetate of lead, and one grain of carbonate of soda, are separately dissolved in a

small quantity of water; two or three ounces of flaxseed tea, containing four drops of laudanum of Sydenham, are added to these solutions, and as soon as the mixture is made, it is given in injection. By augmenting gradually the dose M. D. has given five grains of the acetate of lead, and two and a half of the carbonate of soda. These enemata should be repeated morning and evening. M. D. has employed this medication in a great number of phthisical patients, and always with advantage; sometimes the diarrhœa, though of long continuance, has been entirely arrested, and in all cases it has been diminished, and sometimes the expectoration and sweats have also diminished.—*Bulletin Gén. de Thérap.* 15th of September, 1836.

25. *Case of poisoning with arsenic treated with the hydrated tritoxide of iron.*—Evidence is accumulating of the efficacy of the tritoxide of iron as an antidote to arsenic. Mr. JOHN ROBSON, house surgeon to the Warrington Dispensary, has communicated to the *London Medical Gazette*, 5 Nov. 1836, the following case:

"On Wednesday, September 7th, 1836, a man bought a quarter of an ounce of arsenic, and about two o'clock in the afternoon mixed it in a teacup with a quantity of water, stirred it round two or three times rapidly with a teaspoon, and immediately swallowed it; a portion, not more than a quarter of the whole, remained at the bottom of the cup. He then walked out with a person who had unsuspectingly witnessed the proceeding, and who was quite incredulous till the man's altered countenance confirmed his positive assertion that he had taken poison. Nearly a quarter of an hour elapsed before he began to feel sick; he then introduced his fingers into his throat to excite vomiting, and with some difficulty got up a mouthful of a clear fluid. Having reached a house in the neighbourhood, he complained of violent pain and retching; got some salt and water, which he immediately rejected with two or three pieces of potatoe, but the stomach still retained its other contents.

"Mr. Sharp, Mr. William Furnival, and myself, saw him soon after three. He was sitting on a chair, with a wild and anxious expression of countenance, and his eyes were blood-shot; he was perfectly collected, and spoke correctly; had burning pain about his stomach and belly, which was swelled so as to have burst the buckle of his belt; violent beating at the heart, and an acid taste in his mouth.

"A pint or two of warm water was thrown into the stomach by means of the pump, and on reversing the action of the instrument, a few ounces of fluid came back easily, but the tube became choked up, and was of necessity withdrawn. This was followed by a pretty copious rejection of fluid mixed with potatoes, pieces of which had got into the tube of the pump, and prevented its action. On being cleaned, it was again introduced, and another portion of warm water injected, but the pump, when reversed, still refused to act, and was finally withdrawn. The sickness had ceased, and could not be renewed by tickling the fauces. He felt something better after the vomiting.

"It will not be thought irrelevant to say a few words on the state of the man at this moment. He had in the morning drunk a glass of rum and several glasses of ale. While under the influence of this liquor, and immediately before taking the arsenic, he had eaten five or six cold potatoes. The exact quantity of arsenic swallowed could not be ascertained, but it must have been a very large dose.* The vehicle in which he took it was one very likely to produce its peculiar effects upon the stomach; it was also evident that the sickness previous to the use of the pump had left the contents untouched, or nearly so. The injection of the warm water would still further dilute the fluids already in the stomach; and allowing that a portion of the arsenic was dissolved and vomited,† would not the very dilution facilitate the deposition of the remainder on the mucous membrane?

"It was now two hours since the poison had been taken. About six drachms of the carbonate of iron were mixed in water and given to him at twice, one draught immediately following the other. He said his stomach felt cooler; and his pulse,

* A quarter of an ounce of arsenic sold in the shops equals two drachms and two scruples apothecaries' weight.

† A part of the fluid with potatoes rejected at this period, after having been boiled and filtered, was subjected to the action of sulphuretted hydrogen gas, and assumed the characteristic lemon tint, but remained perfectly clear.

which had been upwards of 130 just before, sank to 112. The pain ceased, or nearly so. He was ordered to bed, and to take half an ounce more of the carbonate in half an hour.

"At half-past five I found him asleep, and in a copious perspiration. When he awoke he had no pain; there were occasional sensations of burning in the epigastrium, and strong palpitations; pulse 108; his eyes were still red, and his look anxious. A quantity of the newly prepared oxide of iron was now administered. In the course of the evening he made a large quantity of clear and healthy urine. The pain continuing under the ensiform cartilage, he had ten leeches applied. He did not sleep. About two in the morning he was seized with violent pain and twisting in the belly, which was followed by vomiting; his bowels acted two hours after, and the urine was abundant. The matter vomited seemed to consist principally of the oxide, but at the bottom of the pot were some pieces of stringy mucus, which might be drawn up the sides amongst the urine; the stool could not be examined. He said he felt sick and worse after taking the physic; occasional heartburn; pulse 90.

"On Thursday morning we had more of the prepared oxide, which was more carefully washed than the first. He said it was not so good to take; but he had no more sickness; pulse 75; slight headache. He slept soundly in the night, and early on Friday morning felt an inclination to go to stool, but passed nothing. The oxide was discontinued, and he had an ounce and a half of castor oil, which operated twice. The first stool was of a formed consistence, of a dark green colour mixed with brown, and with several pieces of undigested potato in it, exactly like those vomited on Wednesday; the second stool was preceded by some griping, but was not seen. He had some twitching in his head on Saturday, so that, as he said, he was not able to hold it still. Had another stool, of a natural consistence, of a peculiar brown colour, and partially covered with a black shining mucus. His diet during the whole time consisted of gruel, tea, and dry toast."

26. *Neuralgia relieved by muriate of ammonia.*—Mr. F. C. SKEY states that he has repeatedly seen the form of neuralgic pain which frequently attacks pregnant women, and occasionally referred to the presence of a carious tooth, relieved in the course of a few hours by half drachm doses of the muriate of ammonia, taken in solution.—*Lond. Med. Gaz.* 5 Nov. 1836.

27. *Neuralgia cured by aconitine.*—Two cases of neuralgia which had resisted every description of depletive and counter-irritant, and which were cured by the application of aconitine, are recorded by Mr. F. C. SKEY in the *London Medical Gazette*, (Nov. 5, 1836.) The remedy was rubbed down into an ointment with lard, in the proportion of one grain of the former to one drachm of the latter, and applied in a small quantity by the forefinger over the track of the painful nerve, and was gently rubbed or rather smeared over the surface, for half a minute or longer. The applications were according to the degree of pain,—either once or twice in the day.

28. *Thymic asthma.*—Our preceding No. contains a full account of this disease, collected from the writings of Drs. Kopp and Hirsch of Königsberg and Dr. Montgomery of Dublin. It will be remembered that according to the writers just mentioned, the disease depends upon an affection of the thymus. Dr. ROESCH of Schwenning, Wurtemberg, in a memoir in a recent No. of *Hufeland and Osann's Journal der Practischen Heilkunde*, whilst he admits that in all cases hypertrophy of the thymus has been met with, denies that this condition of the gland constitutes the essence or basis of the disease, since the symptoms of suffocation which are observed are not those produced by a mechanical obstacle to the circulation of the blood in the heart—there being no lipothymia, no asphyxia, no instantaneous cyanosis, and if the face becomes bluish, it is not until the paroxysm is protracted and the respiration has remained long suspended. The infants keep their mouths opened to inspire the air, and as soon as a small column of air has penetrated into the lungs, which is announced by the peculiar cry of the patient, the paroxysm has terminated.

Secondly, the attack does not follow exertion or unruly movements, as would happen if it were excited by the mechanical pressure of the thymus on the large

vessels: on the contrary comes on in moments of repose and especially when the child awakes. Finally, the cure, when once effected, is principally due to the administration of antispasmodics.

The disease in question, according to Dr. Roesch, is then, a neurosis—a spasm of the glottis,* a convulsive asthma of the larynx; and several times a material disorder of the organs which form the larynx has been found. Thus Caspari has found the pneumogastric nerve softened; as was also the brain in that case. In two other cases, the ligaments of the glottis, and in a fourth the epiglottis had undergone the same transformation without any traces of inflammation.

M. R. endeavouring to establish a parallel between the croup, asthma of Millar, and thymic asthma, considers the first as a subacute inflammatory neurosis—a neurophlogosis of the larynx: the second as an acute neurosis without inflammation; and the third as a chronic neurosis of this organ. He conceives this last to depend upon an impoverishment of the blood, to a deficiency of assimilation and nutrition. In fact, the subjects of thymic asthma are for the most part of a scrofulous constitution, rachitic and very subject to attacks of convulsions.

Dr. R.'s memoir contains an account of four cases, the symptoms and progress of which present nothing peculiar: the ages of the patients were from 5 to 15 months. The first died, the second was cured, and the two others have been lost sight of by the author.

The treatment employed by Dr. R. is tonic and antispasmodic, and he particularly lauds the utility of the cod's liver oil.

29. *On Hypertrophy, with Dilatation of the Heart, in Children.* Dr. TOEL, of Aurich, is of opinion that this affection frequently develops itself as a consequence of pulmonary inflammation, measles, whooping-cough, &c. It comes on insidiously, after the patient appears to have, in a great measure, recovered from one of the above complaints. It is a more frequent result if the latter have run an irregular course. Then, after some time has elapsed, the pulse, which had lost its inflammatory character, becomes quick, small, and sometimes irregular. A dry cough, without pain or expectoration, makes its appearance. The sounds of the heart are heard over a greater extent than usual; the strokes are not distinct, and would seem to flow into one another. The patient feels a weight and dull pain under the sternum, on the left side, but does not complain much of it. The breathing is shorter than formerly. The face assumes a very peculiar and almost indescribable expression of suffering. Towards evening the hands are perceptibly hotter; the jugular veins beat without intermission. The little patients are not yet thought to be very much out of health; they walk about, go to school, are only rather more delicate than usual, avoid a horizontal posture in bed, are very short of breath after exertion, and become more irritable than formerly. It is here, as usual, very difficult to define the point at which functional becomes structural derangement; but the latter may be confidently surmised when the symptoms continue without intermission, even during a period of perfect repose.

Dr. Toel recommends vigorous measures as soon as any of these symptoms make their appearance. The expectant method would lead inevitably to a fatal result. Antiphlogistic remedies must be adopted in full force, perfect repose both of mind and body enjoined, together with the absence of all stimulating, and the diminished exhibition of all nourishing agents. Should this stage of the disease be not combated vigorously and successfully, there is no hope for the future. The progress of the evil may be now slower, and now more rapid, and sometimes even be apparently arrested, but it is sure never to cease altogether. The symptoms which attend its advanced age are too well known to need a new description. Dr. Toel's principal object is, to direct the attention of medical men to the fact that hypertrophy of the heart frequently follows the diseases above mentioned, as he is of opinion that such a result has not been sufficiently known, and consequently not sufficiently guarded against.—*B. and F. Med. Review*, from *Hannoversche Annalen*, B. 1., Heft. 2, 1836.

30. *Ethereal Tincture of male Fern Buds in cases of intestinal worms.*—Dr. PESCHIER, of Geneva, asserts that he has cured 150 cases of Lumbrici, triocephali,

* This is also the opinion of Caspari, Marsh, Clarke and Pagenstecker.

and teniæ, in nine months, with the ethereal tincture of male fern buds (*Polypodium felix mas*) in doses varying from viii. to xxx. drops, in as many pills as there are drops. His brother, an apothecary at Geneva, and the discoverer of this tincture or oil, gives it in doses of from thirty to thirty-six drops in syrup or castor oil, or in pills one half at night and the other on the following morning; and two hours after the morning dose *Ol. Ricin.* ʒij. This quantity is usually sufficient to expel the worms.

Dr. Fosbroke (*Lancet* 8 Aug., 1835,) gives it on a lump of sugar, and seems to have had much success with the remedy.

Culpepper and Salmon as well as some of the older writers, as Dioscorides, Theophrastus, &c. speak of the anthelmintic powers of the male fern, and in the hands of Madame Nouffer, as a secret remedy, it acquired such celebrity that the French government were induced to pay her a large sum for making public her remedy.

31. *Cold affusion in Ileus.*—Dr. WOLFF, of London, relates in the *Lancet* (10 Dec., 1830) a case of ileus, in which cold water poured on the abdomen and the application repeated at short intervals, seems to have materially contributed to the cure.

32. *Enemata of Belladonna in Ileus.* *Hufeland and Osann's Journal* for the past year contains an interesting paper by Dr. M. B. HANIUS on the utility of enemata of belladonna in the treatment of ileus. Dr. Hanius records five cases of the disease, three of which were of the greatest severity, successfully treated by this means. In the two first cases he prepared the enemata according to the following formula: *Rx Rad. Belladon.* ʒj. *aq. Bullien.* q. s. Digest in a close vessel for an hour and strain. Two ounces of this was mixed with an equal quantity of infusion of chamomile and administered as an enema. In the three other cases he used an infusion of the plant instead of the root, three drachms to six ounces of water, one fourth administered at once and the like quantity two hours afterwards.

33. *Nitrate of silver in chronic affections of the stomach.*—In consequence of the favourable representations of Dr. James Johnson of the efficacy of the nitrate of silver in neuroses of the stomach, Dr. RUEF has been induced to experiment with this article in a great number of chronic affections of the stomach; and his experience not only confirms that of the English practitioner but has also led him to new results. Dr. R. in an article in the *Medicinische Annalen*, (Vol. I. No. 2.) states that he employed the nitrate of silver in idiopathic neuroses, in cancer and scirrhus indurations of the stomach as a palliative and calment, and also in certain chronic inflammations of this organ, though he cites no cases of this last.

In many cases of true scirrhus of the stomach and even of the duodenum and transverse arch of the colon, the nitrate of silver has proved to be an excellent palliative, a powerful sedative; in some cases appeasing the intolerable pains which ordinarily accompany this disease.

Dr. R. has observed no injurious effects from the use of the nitrate of silver, no discoloration of the nails or skin. He constantly administers the article in pills according to the following formula. *Rx. Argent Nit.* gr. x; *Extr. Taraxic,* *Rad Iris Florent,* āā gr. lxx. *m. ft. pilul.* No. 40. One to four pills to be given night and morning.

Dr. Ruef also recommends this article in the cases of nervous vomiting and other derangements of the digestive functions so common in young infants. He has administered it to one of these little patients with success according to the following formula. *Rx. Argent Nit.* gr. ½; *Aq. Flor. Aurant. Syr. Canell. Alb.* āā ʒss. A tea-spoonful every hour.

We feel convinced from our own observations that the action of nitrate of silver upon the mucous membranes is not properly appreciated, and that in inflammations of this tissue it often acts as a specific. Its powers are deserving of more extensive investigation.

SURGICAL PATHOLOGY AND OPERATIVE SURGERY.

34. *Excision of a portion of the ileum and the mesentery.* Professor Dieffenbach, of Berlin, has added to his laurels by the successful performance of this operation. We give the Professor's own account of the case as published in the *Wochenschrift für die gesammte Heilkunde* for June, 1836, adopting the translation of the London Medical Gazette.

Some months since I was called upon in the morning to attend a country labourer, aged 50, suffering under strangulated hernia. I found a strongly built, powerful man, with femoral hernia on the right side. The incarceration had already existed fourteen days; and during this time, repeated but fruitless attempts to replace the intestine had been made by different surgeons. From the extended inflammation in the whole neighbourhood, added to the prolonged incarceration, I was led to expect that mortification, together with extravasation of fæcal matter in the hernial sac, had already taken place. As the skin and integument were not yet weakened, I considered the immediate opening of the sac as the first and most important step; still the unruly old man would scarcely allow me to make an examination with my fingers, much less would he consent to an operation. In addition to these difficulties, the patient being quite deaf, prevented the necessary explanations of his condition; so that I found myself at length obliged to give up all hopes of affording relief. I should, perhaps, mention that the patient had suffered, during the whole time of the incarceration; all those symptoms which usually accompany strangulation. The abdomen was tense and distended; there was perfect obstruction, and, in short, all the symptoms which would seem to threaten speedy death. Still it was matter of satisfaction to me that in leaving the patient, there appeared so little chance of success, had he consented to my operating upon him.

The following night I was again requested to visit the patient; it was with reluctance I went, because the journey promised so little success. The poor man was now sinking fast, and the anxiety of death was evident.

The abdomen was more tympanitic than in the morning, and, indeed, the separate convolutions of the intestine could be plainly distinguished through the abdominal parietes. There was also that violent rumbling of gas in the intestines, so often a symptom in extreme cases.

With the help of my valuable assistant, Dr. Hildebrandt, and the landlord of the house, I undertook the operation. The first step was an incision, the length of my finger, through the centre of the widely-extended and flat tumour. The cellular membrane was spotted, and firmly attached to the outer coat of the hernial sac. Upon opening the sac, there escaped a putrid mass, consisting of decomposed hernial fluid, with portions of gangrenous intestine and fæcal matter. The small portion of strangulated intestine (about the size of a plum) had an aperture in its superior surface large enough to admit the thumb. After properly cleansing and examining the parts, no fæces escaped. It was with difficulty that the forefinger could be introduced through the mouth of the sac into the intestine; and again, upon withdrawing my finger, nothing followed it. Without disturbing the adhesion of the intestine at the mouth of the sac, I made three deep incisions in the femoral ring; this also proved fruitless, and we could not produce the discharge of fæces either by means of manipulation or change of position. This arose partly from the extreme narrowness of the mouth of the sac, and partly from the thickened parietes of the strangulated portion. Once more I applied some force, for the purpose of dilating the neck of the sac, but this last attempt was attended with as little success. Unwilling to let the man die without making farther attempts to give him at least some relief, I proceeded to divide the adhesions, and then drawing the intestine out until I came to the sound part, I cut out the portion that was already perforated and had been incarcerated, together with the thickened portion on each side, altogether comprising a length of about three inches. I also removed with the scissors a corresponding portion of mesenterium. One of the divided arteries of the mesenterium bleeding, I passed a ligature round it, and cut off the ends close to the knot. I did not apply torsion to the vessel, fearing that from the absence of support the vessel might untwist itself, and thus lead to unpleasant consequences. Whilst I was

thus engaged, each of my assistants held a portion of intestine between his fingers. These portions contracted so firmly, that nothing larger than a common quill could have been introduced; the extreme edges, however, were relaxed, and could be easily directed outwards. I now proceeded to join together the angular wound of the mesentery, by bringing its edges into contact by means of a continuous suture, which was composed of a very fine silk thread. I then joined the edges of the intestine by means of a separate thread, making the first stick at about two lines distance from the edge; and so, by passing the suture transversely across the fissure, whilst each stitch entered the muscular coat, I brought the serous coats in contact with one another, in the same manner that Lambert teaches. The mucous membrane was not at all wounded, but its edges were directed inwards, forming a wring. The intestine was now returned with the greatest care, lest in moving it the edges might be torn through. So far every thing had gone successfully, and I waited some time with the hope of an evacuation taking place. As this did not occur, I ordered some castor oil, and then went home, with the expectation of finding the patient a corpse on my next visit.

Early on the following day I found him still living, but without having had an evacuation. Strong doses of *ol. ricini* had been attended with no result; I therefore added *ol. crotoni*, and directed the patient to be raised and placed upon his feet. Immediately after this had been done, there followed some most plentiful evacuations, accompanied with the sensation of considerable relief; and such a general improvement of his condition took place, that he may be pronounced to have been no worse than he would have been had the hernia been accompanied by moderate symptoms. The abdomen had contracted after the continued evacuations, and his feelings were as favourable as could have been wished.

In this manner passed several days, during which I continued a moderate antiphlogistical treatment. An emulsion, consisting of *ol. ricini*, with *aq. lauro-cerasi*, was the only medicine I had recourse to. His diet consisted at first only of gruel; afterwards he was allowed veal broth. The condition of the patient improved daily; the only complaint he made was of hunger. He was soon in a state to take solid food without inconvenience, and his stools became quite natural.

There was a considerable secretion of pus during the healing of the external wound, but the abundant granulation showed the excellence of his constitution.

Several of my professional friends visited the patient, and took lively interest in his probable recovery. This followed so rapidly, that after fourteen days he was able to stand, and pass some hours a day in his arm-chair. The dressing of the wound was under the care of Surgeon Sierig, and was attended with such success, that in three weeks only a little scurf remained.

In the fourth week the patient was quite healed; he ate and drank as usual, and returned to his laborious field work. I did not visit him after that time, neither did he come to me.

Some weeks subsequent to the perfect recovery of this man, I was requested suddenly to visit him; but as I was indisposed at the time, I begged Dr. Von Arnim to go in my stead. He found that the patient, after heavy labour, and an immoderate meal of fat meat and other indigestible substances, was suffering from violent pain in the abdomen, vomiting and constipation. From these symptoms, Dr. Von Arnim anticipated intussusception. Bleeding in the arm, and by means of leeches, purgatives, and clysters, was had recourse to, but without success. The pain became more and more violent, and the obstruction of the bowels remained until he died.

I was present at the *sectio cadaveris*, and although I felt vexed at the death of perhaps the only man living at that time who had recovered in so astonishing a manner after the excision of a portion of intestine, yet, on the other hand, it was matter of consideration to me to think that the death of the patient would explain the mode of healing, and secure a boon to the science.

The following is the result of the post-mortem examination, conducted by Professor Froriep with his usual care and ability:—

In outward appearance the body was well-conditioned and firm. The abdomen was very tense, and somewhat distended. Percussion with the finger gave no sign of the hollow tone distinguishing tympanitis, but, on the contrary, the dull sound which is usually heard only over the liver was extended over the

whole abdomen. In the right groin was a bluish firm cicatrix, somewhat sunk, although not drawn inwards. The navel was free from contraction inwards. Upon opening the abdomen, some reddish clear fluid escaped. As the abdominal parietes, which had been divided by a cross section, were thrown backwards, it was observed that the entire anterior portion of the cavity was occupied by the distended and extremely complicated convolutions of the small intestine, so that all the other viscera were concealed by them; a portion of the omentum only was seen emerging from the right hypochondrium, and passing obliquely over towards the pelvis, was attached in the neighbourhood of the left foramen obturatorium. Underneath this portion of omentum the intestines moved to-and-fro with perfect freedom; therefore no sort of obstruction could be caused by it. This band was then divided, and the intestines, which formed so compact a layer, were lifted up, in order to see the condition of the other parts situated more deeply.

In the right iliac region were the cœcum and a convolution of small intestine, not distended as the remainder, which was firmly attached to the posterior edge of the femoral ring, and from this spot was continued a portion equally free from inflammation and distension: this passed over to the left lumbar region, where it ended in a complicated knot of small intestine, adherent to the parietes, quite firmly united, and considerably inflamed.

This preliminary examination gave evidence of two abnormal conditions: first, adhesion and intricacy of the small intestine in the left lumbar region, above which the intestine was inflamed and immoderately distended,—below it, empty, collapsed, and uninflamed; secondly, adhesion of the intestine at the inner femoral ring on the right side, where the operation had formerly been performed for hernia: still, it was nevertheless evident that the intestine was not impermeable at the seat of the operation, but at some point considerably above it, the portion of intestine lying on each side of the spot alluded to being empty. Still, great care was necessary in pursuing the investigation, as nothing could more easily occur than such a displacement of the parts as should prevent the recognition of the true cause of the obstruction.

After examining the colon, and finding that congestion and distension were only in the small intestine, I commenced at the duodenum, and continued the examination from thence downwards; its coats were thickened, and here and there upon its surface were perfectly isolated patches of coagulated fibrin. In the cellular tissue, between the serous and muscular coats was a partial serous extravasation. These signs of enteritis became more evident on the ileum, where the convolutions were in some places slightly adherent one to the other. When I got to the middle portion of the ileum, I found the colour of the intestine a dark purple red; it was distended to treble its usual volume, and covered with numerous congested and dark-looking blood-vessels. The distension was greatest in the neighbourhood of the adhesion in the left lumbar region, but it terminated suddenly at a part where another convolution of the ileum was drawn round the first like a band. The distension was not caused by gas, but by an immense quantity of fluid fæcal matter which filled the stomach, duodenum, jejunum, and ileum, as far as the obstructed spot. The obstruction was occasioned by a portion of the ileum being united, by means of false membrane, to a convolution which had evidently after this completely revolved upon its axis, so that the two processes of this convolution had twisted themselves about one another like the strands of a rope. In this situation new false membrane was produced (evident from the redness of its vessels), and thus the entire convolution was firmly united, and the constriction of the ileum made inseparable. Around the whole lay more recent patches of coagulated fibrin.

In the convolution and below it the intestine was almost empty, containing only a small quantity of pale yellow mucus, without fæcal odour, and in some parts collapsed into folds. A portion of intestine in this part, about two feet in length, and likewise empty, passed over towards the right side, across the lumbar vertebræ. Here was likewise a firm false membrane from one portion of intestine to another adherent portion: underneath this was a space sufficiently large to admit three fingers; this was empty. From this spot the intestine passed downwards into the cavity of the pelvis in many convolutions, and was closely attached to the right side; it then ascended a little, and passed immediately to the inner

orifice of the right femoral canal, where it was likewise firmly adherent to the abdominal parietes. As I carefully divided the pseudo-membrane in this part, between the abdominal muscles and the intestine, to the depth of from two to two and a half lines, with a scalpel, a drop of pus made its appearance; and as I wiped this away with a sponge, I discovered the end of a silk suture, which, however, was still firmly embedded: of course this proved that I was arrived at the place where the intestine had been united in the operation. This spot was firmly connected with the parietes and the neighbouring convolutions. I now opened the intestine above this part sufficiently wide to admit the little finger; this passed easily, and, indeed, directly after I passed the index finger through the formerly-divided spot there was contraction of the passage to be discovered. As I now proceeded to open this part from above downwards, the superior portion of the ileum was united with the inferior by means of a smooth cicatrix, which was only interrupted in two spots by the suture: in this cicatrix lay the suture before described as seen externally, firmly attached at the point *o*, and from thence its two threads passed downwards, lying in the cavity of the intestine. From this spot the ileum proceeded behind the convolutions across the *linea innominata*, and, after extending itself a few inches, joined the cæcum. Here we found a few hard fæcal lumps, and the pale yellow mucus before mentioned. From the anterior or outer side of the spot where the intestine had been joined, the substance of the cicatrix passed through the canal communicating with the external cicatrix.

The superior portion of the intestine is quite smooth, and has neither swelling nor fold as far as the inner smooth cicatrix, where the *papillæ* of the mucous membrane cease. This line is about half a line wide, and below it the intestinal coats are collectively contracted into a triple fold, or projection, which is kept in that condition by the adhesion and subsequent contraction of the pseudo membrane, which lies externally, and connects this portion with the cicatrix, as before explained. Below this tumour the intestine is in every respect in its natural condition. For some little space both above and below, the intestine was connected with the peritoneum lining the anterior parietes by means of effused pseudo membrane, which is likewise in connexion with the cicatrix in the *annulus cruralis*.

As the remaining organs presented nothing interesting in respect to the operation, I shall take no notice of them.

35. *Wardrop's Operation for Aneurism.*—In an editorial article, in a recent number of the *Lancet* (29 Oct., 1836,) a distinction is pointed out between the operation of Brasdor and that of Wardrop, which seems justly founded, and to which we will therefore invite attention. "The three different operations for aneurism are those of Hunter, Brasdor, and Wardrop, each essentially differing from one another. Hunter's operation consisted in placing the ligature on the artery, at a considerable distance from, and on the *cardiac* side of, the tumour. Brasdor proposed, in such cases of aneurism of the extremities as were so situated that there was not room enough to apply a ligature on the cardiac side of the tumour, to place the ligature on the distal, or what is more technically called the "capillary" side of the aneurism. Though that mode of operating had already been proposed nearly sixty years, it had been performed only three times throughout Europe, on all which occasions it proved unsuccessful, until twelve years ago, when it was revived, and successfully employed, by Mr. Wardrop, in several cases of aneurism of the carotid, for which artery it is undoubtedly particularly applicable.

"But the operation which Mr. Wardrop afterwards proposed was founded on a totally different principle, and perfectly distinct, from the operations both of Hunter and Brasdor. Mr. Wardrop was led to perform the new operation for the cure of aneurism, by a chain of reasoning deduced from observations made on the results of Hunter's operation, and also from the phenomena observed in the spontaneous cure of aneurism. Many cases were recorded wherein Hunter's operation was successfully performed, but in which it was afterwards found that the artery on which the ligature had been placed was not sufficient altogether to prevent the circulation of the blood within the aneurismal tumour, the circumstance of a *diminution* in the velocity of the blood within the tumour being sufficient to permit its coagulation to take place for the cure of the disease. He further observed, that when aneurism was cured by a spontaneous process, nature

sometimes effected her purpose, not by a *complete* interruption of the circulation within the tumour, but by diminishing it to such a degree as to cause its coagulation. Hence he justly concluded, that in cases of aneurism thus circumstanced, when a ligature could be placed neither on the *cardiac* side of the tumour, as proposed by Hunter, nor on the artery on the *capillary* side of the tumour, as proposed by Brasdor, a diminution in the force of the circulation, sufficient to permit the coagulation of the blood within the tumour, would be effected by placing a ligature on the capillary side of *only one branch* of the diseased artery. When, for instance, the *arteria innominata* is the seat of aneurism, and when it is impracticable to place a ligature on that vessel, either on the cardiac or on the capillary side of the tumour, Mr. Wardrop conceived that if the circulation, either through the carotid artery alone, or through the subclavian artery, could be arrested, then such a diminution would take place in the force of the circulation within an aneurism of the *innominata*, that a gradual coagulation of the blood would be ensured, fortifying the parietes of the tumour, and so preventing the bursting of the sac. This operation Mr. Wardrop successfully performed in the memorable case of Mrs. Denmark. The operation was afterwards adopted in a case of aneurism of the *arteria innominata*, by Dr. Mott of New York. The *third* case of aneurism of the *innominata* was similarly and successfully treated by Mr. Evans of Belper; a fourth case is now added by Mr. Fearn."

A sixth case is recorded in our preceding number, p. 329, by Dr. MORRISON of Buenos Ayres. Wardrop applied the ligature in his case to the right subclavian; Mott, Key, Evans, Fearn and Morrison, in their cases placed the ligature on the right carotid.

36. *New Method of Treating Ozena and Chronic Coryza*.—There are few diseases of a simple kind which are more rebellious than ozena, when once fully established. The numerous methods proposed for its cure, and the numerous cases which we daily see resisting all the means employed to combat this unpleasant malady, sufficiently prove the truth of our assertion. Ulceration of the pituitary membrane has generally been considered as the most prevalent cause of ozena; however, in many other cases, there is evidently no ulceration or breach of surface of any kind; here chronic inflammation has been supposed to exist by many practitioners; but this opinion is opposed by a great many facts, and we are compelled to admit that although chronic irritation may develop ozena, it is not the efficient cause of the disease. M. TROUSSEAU adopts an hypothesis which is sufficiently ingenious, and in accordance with several physiological facts. Many parts of the body, the feet, axillæ, &c., naturally exhale an odour *sui generis*, and in some individuals a very fetid smell. Whenever the parts above-mentioned become irritated or inflamed, this odour becomes still more strong, the irritation exaggerating the natural fetidity to a high degree. The same observation is applicable to the mucous membrane of the nares: in many individuals the odour of the mucus secreted in the nares is naturally strong: whenever they catch cold in the head (as it is said,) this odour increases, and reaches its maximum whenever any cause, such as ulceration, caries, &c., keeps up a permanent fluxion of the nasal mucous membrane. According to this idea ozena may be defined, a peculiar odour of the nasal mucus, which is in general occasioned by a chronic fluxion of the olfactory mucous tissue.

The tenacity of inflammations which attack the mucous membrane of the nasal fossæ has been remarked by all physicians, though nothing is more easy than to combat them by topical means when they effect only the entrance of the nares: hence the obvious conclusion that the difficulty of the cure depends upon the difficulty of carrying our remedial means immediately to the seat of the disease.

The inspiration of medicated vapours presents the most complete means of applying a substance to the whole surface of the nasal fossæ, but is accompanied with the great inconvenience of acting on the lungs at the same time; hence we are compelled to have recourse to insufflation or injection; and of all remedies, experience shows the mercurial preparations to be the most efficacious. We may employ the protochlorure or the deutochlorure of mercury, indifferently, after the following formulæ:

Rx *Protochlorure of Mercury* 24 gr.; *Red Oxide of Mercury*, 12 gr.; *Sugar-candy powdered* $\frac{1}{2}$.

Rx *Deutochlorure of Mercury* \mathfrak{D} ij; dissolve in sufficient alcohol, and add distilled water $\frac{3}{4}$ xij. The patient must inspire strongly a pinch of the powder, and repeat it five or six times a day, or mix one or two spoonful of the solution in a glass of warm water and inject. By this simple method M. Trousseau has succeeded in curing several cases of ozena and chronic coryza.—*Lancet*, from *Journal des Connaissances Médico-Chirurgicales*, May, 1835.

37. *Treatment of White Swellings by muriate of Barytes*.—In the *Gazette Médicale de Paris* of 2nd April, 1836, there is a report of a clinical lecture of M. Lisfranc's, containing the results of this eminent surgeon's experiments with the muriate of barytes in white swellings. This medicine has recently been brought into notice, or rather attention revived to it by Dr. Pirondi, of Marseilles. It is administered in the following manner. Six grains of the salt are dissolved in four ounces of distilled water, of which one spoonful is taken every hour, except one hour before and two hours after each meal. In order to tolerate the medicine, the patient must abstain from wine and meat, taking only water and vegetable food. The bottle should not be exposed to the sun, or the salt will be precipitated, and the last spoonful contain a greater quantity; to avoid this, it should always be shaken. Sometimes the medicine produces slight pain in the stomach, or a feeling of weight; but if other symptoms do not follow, the stomach gradually becomes accustomed to the remedy, and the pain ceases. If, on the other hand, nausea, vomiting, or even some slight symptoms of poisoning come on, the medicine should be suspended, and cautiously resumed. The climate has some influence; for, although at Marseilles two drachms have been given, M. Lisfranc has never been able to increase the dose in Paris beyond forty-eight grains, and often he has been unable to reach that. The unpleasant symptoms have been removed by whites of eggs. Numerous patients have been submitted to this treatment, and the following are the conclusions which M. Lisfranc has arrived at.

1. Generally the white swelling has been much amended, and sometimes cured. 2. The benefit has been greatest amongst the scrofulous. 3. In some very few cases the muriate alone has cured. 4. After a certain time, the disease having become stationary, it was necessary to employ another method. At a later period, the renewed use of the muriate has produced excellent effects. 5. It may be employed both in the acute and chronic stage of white swellings. 6. Serious accidents have never resulted from its use; the slight symptoms before mentioned have always yielded readily. 7. A frequent effect is a diminution in the frequency of the pulse; this falling from sixty or eighty to forty or fifty, or even to twenty-five. 8. In some circumstances the medicine, continued at the dose of twelve grains during the month, has produced as much amendment as in other cases where the dose has been gradually augmented. 9. Where the patients have been slightly inconvenienced with the medicine, it has been most useful. 10. Compression and local abstractions of blood have been often combined with this treatment, and with extreme advantage.

M. Lisfranc regards the muriate of barytes administered as recommended by Pirondi as a valuable acquisition to surgery.

38. *On the Cure of Intestinal Fistulæ by the Actual Caутery*.—The success attending the employment of the hot iron in the cure of artificial anus, already recommended by Deffenbach, is confirmed by two cases related by Dr. FINGERHUTH.

In both, abdominal inflammation, caused by violent blows, had been followed by external abscess, to which succeeded discharge of fæcal matters. Various cauteries were employed to destroy the membranes lining the fistulæ, and to convert them into granulating surfaces, but without producing their complete obliteration. The fistulous openings, although somewhat diminished by imperfect granulations, showed no tendency to become closed. Cauterization was then adopted by means of an iron, corresponding in diameter to that of the fistulæ, and the temperature of which was scarcely elevated to that of red heat. Luxuriant granulations soon covered the cauterized parts, the fistulæ diminished, and the

surfaces being again destroyed by a heated iron corresponding in size to the apertures which remained, they were eventually cured.—*Dublin Journal*, 1837, from *Wochenschrift für die gesammte Heilkunde*, No. 6, 1836.

39. *Dislocation of the femur upwards and forwards on the pubis*.—A case of this infrequent accident was admitted into the Glasgow Royal Infirmary. The subject of it was a woman aged 24, in the eighth month of utero-gestation. Eleven hours previous to admission, on going down stairs with a large vessel of water in her hand, her right foot slipped, and, to recover her balance, she threw her body violently backwards, and fell on her right hip. She was unable to rise or to make any use of the limb, which was shortened one inch, and permanently everted. Adduction and rotation outwards could be partially performed, but attempts at adduction or rotation inwards, were productive of acute pain. The globular head of the *os femoris* was distinctly recognised on the pubis, and was seen as well as felt to move in unison with the shaft of the bone. The nates of the injured side was flattened, and there was a distinct hollow in the situation of the acetabulum.

Reduction was easily accomplished by Dr. MACFARLANE. She was placed on the left side in bed; a broad sheet was passed between the thighs to fix the pelvis; extension was applied above the knee, and in less than two minutes, the head of the bone was felt to move, when, on sudden rotation inwards, reduction was effected. She left the house in about a week quite well.—*Edinburgh Med. and Surg. Journal*, Jan. 1837.

40. *New operation on the urethra and prostate*.—Mr. COSTELLO at the meeting of the Westminster Medical Society of the 4th of February, 1837, stated that he had that day performed the operation of scarifying the urethra and prostate gland; and as the operation was as simple as leeching, and far more efficacious, he would shortly state the process, and the accident which first brought it under his notice:—Upon one occasion he was engaged in performing lithotrity upon a patient 73 years of age; the *bouton de sureté* upon the instrument which he employed, had been carelessly made with sharp, cutting edges; and, upon withdrawing the instrument, he discovered that it had scarified the passage of the urethra and the covering membrane of the prostate gland, so as to cause hemorrhage from these parts. Though somewhat startled at the occurrence, he was glad to find that no unpleasant consequences arose, but that the bleeding had removed the pain, irritation, and sense of weight which previously existed. Upon reflection it struck him that an instrument might be made to relieve the turgidity, which formed so unpleasant a symptom, by scarification; and he had since employed the operation in several cases with far more benefit than he had ever seen follow the use of leeches. The quantity of blood obtained in this way could be increased to 4 or 5 ounces, by placing the patient in a warm bath immediately after the operation. It was worthy of remembrance that the incisions gave rise to little or no pain, as was generally the case in cutting internal organs.

At a subsequent meeting of the society, (February 25th,) Mr. C. exhibited the instrument employed by him for scarifying the prostate and urethra. It consists of a silver catheter of the ordinary size, in the tube and extremity of which is fixed a small double edged probe-pointed blade. When the catheter is introduced into the prostatic part of the urethra, this cutting part can be thrust out and drawn back by its attachment to the stilette of the catheter; the extent of the protrusion being regulated by a screw. [The safety of this means of local depletion will have, we conceive, to be established by further experience.]—*British Annals of Medicine*, Feb. 10, and March 3, 1837.

41. *Section of the tendo achillis in the treatment of club-foot*.—This operation was first performed under the direction of Thilenius in 1784, and has been since repeated by Sartorius, Michaelis, Delpech and Stromeyer. Two cases successfully treated by the latter surgeon by this means were noticed in a preceding number, (November 1834, p. 247.)

M. BOUVIER has recently communicated to the Academy of Sciences of France a memoir on this subject, in which he relates three cases successfully operated on

by himself and one by M. Roux, and two others which he has still under treatment.

The operation of M. Bouvier differs slightly from that of Mr. Stromeyer. He introduces under the skin covering the tendon a needle with a cutting edge, by means of which he divides the tendon entirely, cutting from the cutaneous surface towards the bone. The external puncture, which is scarcely apparent, soon heals. The foot is drawn in a few days to its natural position; and the re-union of the tendon takes place in a few weeks without the occurrence of the least inflammation.

This process is principally applicable to those cases of club foot, called *pie d'équin*, which have been of long standing, and in which the employment of machines is often insufficient and even dangerous.—*Journal Hebdomadaire* 17th of September, 1836.

42. *Painful crepitation of the sheaths of tendons*.—The *Gazette Médicale* of 20 June, 1835, contains an interesting memoir by M. POULAIN, on this affection.

Boyer was the first who called attention to this complaint, but he spoke of it so cursorily as to obtain for it but little notice. Velpeau, in 1818, described it very precisely, and since that period, various accounts of it have been published; but as it has not yet found a place in any surgical work some account of it may prove interesting.

The wrist and ankle joints, as every one knows, are surrounded by a number of tendons, many of which are furnished with peculiar aponeurotic sheaths, confounded above and below with the fibrous envelope of the muscles of the limb. These aponeurotic sheaths are the seat of the disease of which we speak; in most cases it is produced by forcible and long-continued tension of the tendons themselves; at other times by external violence; it is also most frequently seen in persons whose trade requires violent flexion or motion of the wrists and fingers, as in washerwomen, locksmiths, masons, wood-cutters, &c.

The principle symptoms are, a swelling, of variable form and dimensions, along the affected parts; pain and redness of the skin, and particularly a crepitation, which sometimes resembles that of fracture so closely that the best surgeon may be mistaken in his diagnosis if he pays too much attention to this latter symptom. The swelling, which rarely exists to any considerable extent, is usually very sensible, but in some few cases so slight as not to be perceived without a minute examination. The pain is most slight when the limb remains at rest, but is always augmented by motion of the limb, or whenever the surgeon presses upon the part, or communicates any motion to the inferior extremity of the limb; the tumour also is usually prolonged a little along some one of the aponeurotic sheaths, but no deformity whatever of the member can be observed. But the most important symptom, in fact, the pathognomic sign of the disease, is a crepitation generally resembling that heard in the first period of pneumonia, but on some occasions sufficiently strong to be mistaken for the noise produced by rubbing together the two fragments of a broken bone; it is, however, in general, much more feeble, and, according to M. Velpeau, resembles the sound produced by walking in a hoar-frost, or over snow when it has frozen. The only disease with which the affection we now speak of is liable to be confounded, is the straining of the ligaments about a joint or a fracture. In some of the former cases we find a kind of crepitation, and it is highly probable that here the two diseases coexist; besides, any error cannot be of practical consequence. Fracture of the inferior extremity of the radius has, it would appear, been frequently confounded with the tendinous crepitation. It was upon an occasion of this kind that M. Velpeau had first an opportunity of remarking the affection. It occurred at the Hospital of Tours in 1818:—

A young cabinet-maker came to the hospital to have the splints arranged which a surgeon had applied for supposed fracture of the radius. On removing the dressings, M. Velpeau wished to ascertain the existence of the fracture, and on moving the thumb was soon convinced that the crepitation alone had given rise to the idea of a fracture, which did not exist. However, a careful comparison of the symptoms will in a great majority of cases suffice to prevent any error. As crepitation of the tendinous sheaths is a slight affection, and constantly is re-

moved by rest, compression, and the use of resolvent applications, no opportunity has as yet occurred of ascertaining its exact seat, which is probably in the synovial membrane, and not in the fibrous tissue itself.

The treatment of this disease is sufficiently simple. When the pain is considerable, and joined with some redness of the skin, it is natural to apply leeches; antiphlogistics do not seem to have much effect. The most successful treatment consists in the application of a roller round the swollen part, drawn moderately tight, and moistened with some camphorated spirits of wine, or any other resolvent; by this means the swelling, pain, and crepitation, generally disappear in a week or two.

This affection, though one of frequent occurrence, has not, as far as we remember, been made the subject of any communication in any of the English or American periodicals. M. Velpeau cites from twenty-five to thirty examples, which he has already met with in the sheath of the peritoneal muscles, extensors of the thumb, radial extensors, and extensors communis digitorum; and cases are now to be seen daily at the consultations of all the hospitals. In two cases treated by M. Velpeau in 1831-2, the disease terminated in a fungous degeneration of the tendinous sheaths of the phalanges.

43. *New method for the operation for aneurisms.*—An Italian surgeon, Dr. SARRA, has proposed a new operation for the cure of aneurisms, which he terms *mechanical obliteration*. It consists in making a longitudinal incision in the artery through which a cylinder of gum elastic, about two inches, is to be inserted. We need not give further details for the operation, as no one, we presume, is likely to put it into practice.—*Gaz. Méd. de Paris*, 10th Sept. 1836, from *Osservat. Medico*.

44. *Lithotrity performed on a child.* M. SEGALAS exhibited to the Academy of Medicine at their meeting on the 4th October last, a child, who, at the age of two years, exhibited symptoms of stone. When thirty-three months old, Mr. S. operated on him by lithotripsy, and in six operations, performed during a period of six weeks, the patient was perfectly cured. This is the youngest child as yet subjected to the operation. The stone was eleven lines in diameter.—*Journ. des Connaiss. Med. Chirurg.* Dec. 1836.

45. *Chronic Vessical Catarrh treated by injections.* M. DUVERGIE, Senr., lauds the powers of balsam copaiba administered by injections into the bladder for the cure of catarrhus vesicæ. He employs it in doses of from 1 drachm to 2 ounces mixed with barley water. He recommends that emollient injections should first be made with a graduated syringe, in order to ascertain the capacity of the bladder, and its degree of irritability. When this organ is very irritable, he combines narcotics with the balsam. The following is his prescription—℞. Laudanum 3j.; Bals. Copaib. 3ij.; Decoct. Hord. ʒij. The whole, or half this quantity, is injected into the bladder, and allowed to remain 10 or 15 minutes or more. If this does not produce too much excitement, the quantity is gradually increased, and the injection is allowed to remain longer in the bladder. If the bladder is extremely irritable, emollient injections must be first used, then opiates added, and finally the balsam. The emollient and narcotic injections should be renewed three, four, or five times a day; the balsamic daily, or once in two days. Ten cases are related in which this treatment was pursued.—*Gaz. Med. de Paris*, 1 Oct. 1836. [This remedy was, we believe, first proposed by Dr. SOUCHIER, of Romans, (*Annales de la Med. Phys.*) and was successfully employed by him in one case.]

46. *Case of compound dislocation of the astragalus and os naviculare.*—Mr. C. M. BURNETT relates in the *Lond. Med. Gaz.* (12 Nov. 1836) the following interesting case.

“Colonel G—— is an active man, of a spare habit of body, upwards of 60 years of age. On the 23d of February last he was fox-hunting, and had made a leap, when suddenly he found himself unable to follow, in consequence of his right foot being displaced. His usual habit was to ride in his stirrup, the foot resting on its outer side. When I first saw him the boot had been removed, which from the force of the injury, had given way, the bone protruding through it. The foot was dislocated inwards, at right angles with the leg; and two bones were plainly to be

seen projecting out of a wound, which was about three inches in length, extending across the outer ankle.

"I carefully examined the situation and shape of these bones: the upper one, the os naviculare, had projected its cuneiform surface outwards and forwards, in an oblique direction; and the other bone was the astragalus, which had forsaken its natural cavity, was driven forwards and outwards, and presenting that surface which in its natural position would be in contact with the os calcis. I steadily kept pressure as firmly as I could, for nearly a quarter of an hour, upon the prominent os naviculare, in the direction of the joint, to which I was directed by the end of the tibia, which was plainly to be seen beneath the astragalus. At the expiration of this time I had the satisfaction to see the bones slip into their proper places, and the foot resume its natural character. The end of the fibula was not fractured. Having placed the limb in proper splints, I conducted him home, where he was met by his family surgeon, Mr. Wickham, of Winchester, in whose able hands I had every satisfaction in knowing it would be watched with an active and intelligent eye. The case has done remarkably well; and by a letter which I have received from Mr. Wickham, he tells me—"I am able now to inform you that Colonel G——'s case has been brought to the most satisfactory termination. The wound is healed, the motion of the joint is perfect, and the swelling of the part is nearly reduced. Weakness, which time only can remove, and the occasional puffiness from use, are the only remaining effects of the injury. You are aware that the progress of the case has scarcely been interrupted, and that inflammatory symptoms only once occurred during the period of his confinement; these were ushered in by a rigor and succeeding heat; they occurred about three weeks after the accident, and only lasted a few hours. At present he is able to walk with crutches, without the least inconvenience, and the limb bears occasionally its share of the weight of the body. As to the motion of the joint, it cannot only be performed by myself, but he can freely bend and extend the foot."

47. *Ligature of the subclavian artery.*—Dr. PHILIP MONTANI, chief surgeon of the military hospital of Capua has recorded in the *Osservatore Medico* a case of traumatic aneurism of the axillary artery successfully treated by him, by the application of a ligature to the subclavian. The case offers no particulars of special interest, but the instances of ligature to the subclavian are sufficiently few to render the fact worth recording.

48. *Observations on the nature and treatment of Ganglion.* By ASTON KEY. The power which tendons have of forming bursal cysts, when they are exposed to extraordinary pressure or friction, is one among the many resources possessed by organized structures, to prevent the occurrence, as well as the consequences, of inflammation. It would seem that ganglia are not merely diseased bursæ mucosæ; for the former are found in parts where, in a state of health, bursæ do not exist. I look upon them as new structures, formed upon tendons, as pressure or friction, or undue exercise of a part, may call them forth. On the patella the presence of a bursa is accidental: it is not always met with in dissection; and probably its formation may depend on the exertion which the ligamentum patellæ has to undergo, or the pressure which it may have to sustain, in the frequent act of kneeling. The contents of a ganglionic tumour differ from those of a common bursa mucosa. The latter secretes a fluid like ordinary synovia, for the purpose of lubricating the tendon: the ganglion most usually contains a substance like the outer layers of the crystalline lens, soft, viscid, and nearly solid. These crystalline ganglia, as they might not improperly be called, are frequently formed about the hand, especially on the extensor tendons, as they pass over the carpal bones; less frequently on the lower part of the theca containing the flexor tendons of the fingers, forming small but sensitive swellings near the metacarpus. They also are occasionally seen on the extensor tendons of the fingers where they pass over the joints, giving pain, and accompanied by a great sense of weakness in the part.

These crystalline ganglia are formed, as I have said, on the tendinous structure, and appear to consist of a double bag: the outer one tendinous and firm; the inner, like a synovial membrane, thin and secreting. In one that I examined on the tendon of the external gastrocnemius muscle, this double bag was distinctly seen.

In most instances, the outer cyst cannot be separated from the inner; the whole seeming to be made up of one fibrous bag, secreting on its inner surface.

The treatment usually adopted for those situated on the back of the wrist-joint, is, to burst the cyst by a sharp blow with a book or any other hard body. If well aimed and sharply struck, it often effects the object of breaking it down; but it as frequently fails, either from the firmness of the cyst or from the unskilfulness of the blow, or from want of sufficient resistance afforded by the wrist. It is also a painful remedy, and is occasionally productive of more subsequent inconvenience than the ganglion had occasioned. The more simple plan is, that of making a small puncture with the point of a lancet; or a cataract needle, when the tumour is small. There is no fear to be entertained of inflammation taking place; as the cyst is little disposed to inflame, and the closure of the opening, after the contents have escaped, by means of a band or piece of plaster, is a sufficient guard against its occurrence. I have never seen or known any mischief to arise from the operation of puncturing these ganglia; and their return is as equally prevented as by any other mode of treatment.*

For the small tumours that occupy the base of the palmar side of the fingers, the puncture is the only remedy. Blisters or blows are ineffectual: the former are very slow in operating, and rarely succeed in removing them; and blows cannot be struck with sufficient accuracy to ensure a rupture of the cyst. The cataract needle is the most convenient remedy: the tumour being sensitive, the patient experiences some pain in its introduction; but it is momentary, and the relief afforded is complete.

When the swelling is situated over the back of a joint on the extensor tendon, pressure should be kept up for some weeks after the evacuation of the cyst. A gentleman, who was much in the habit of writing, applied to me for a swelling of this kind on the first phalangeal joint of the right index: he complained of pain and weakness in the use of it, and was unable to employ the finger steadily in writing. A small puncture was made in it, and about a drachm of crystalline fluid escaped: a piece of riband was bound over the joint, and firm pressure was thus made on the cyst. The fluid did not collect again; and by wearing the riband for a few weeks, in order to secure and steady the finger when employed in writing, he regained the perfect use and strength of it.

I once punctured a similar swelling over the tendon of the trochlearis superior muscle of the eye; and it never shewed any disposition to return. Occasionally, the part that has been the seat of the ganglionic enlargement becomes thickened after its contents have been allowed to escape; and a slight hardness remains, but does not interfere with the use of the part.

The ganglion patellæ is a cyst formed upon the expanded tendon that invests the surface of the patella. Its structure resembles that of the other ganglions, having a dense fibrous covering lined by a secreting membrane. The secretion differs from that of the crystalline ganglia, in being fluid; probably in consequence of having less albumen in its composition. I need not enter particularly into the ordinary modes of managing such ganglia, when they become large or painful. Blisters, stimulating plasters, and pressure with a bandage, are often resorted to with advantage. The more effectual plan for dispersing them altogether, is, to puncture them with a lancet, to let out the contained fluid, and to employ firm pressure with a bandage and plaster. If this does not prove permanently successful, the seton becomes the most ready, the most mild, and the most effective remedy that we have at command.

I have frequently had occasion to employ this remedy for this affection of the knee; and can aver it to be milder in its effects, and in the annoyance it causes the patient, than the common blister. If a few threads be passed through a ganglion patellæ of one knee, and a blister applied to another on the opposite limb, the patient invariably, I have noticed, complains of more suffering from the blistered surface than from the suppuration caused by the seton: and this is in accordance with what we know of the sensitiveness of the skin, compared with the sensibility of a bursa, even in a state of inflammation. The pain complained of during the stage of acute inflammation is inconsiderable; and the moving the

* The best mode of puncturing ganglions, is probably that recommended by M. Chailly, see vol. xix. p. 257, of this Journal.

threads, during the process of suppuration, occasions but little uneasiness. Sometimes a little feverish excitement is produced by the pus not escaping freely from the apertures, which, being retained, becomes decomposed: this inconvenience is remedied by keeping the openings, where the silk enters, free and clear. The seton should be kept in for several days after suppuration is established, in order to promote granulations, and to facilitate the escape of the pus. Even where the ganglion suppurates itself, the seton may be used with advantage, towards accomplishing these two objects.

The detail of cases in which the seton was employed is unnecessary, as they resemble each other in all points of practical import. The length of time required for the complete action of the silks, and the extent of the inflammation induced by them, may vary in different individuals. Many cases have occurred in the hospital, during the last three years, in which the seton has been employed; and, on the whole, I prefer it, as being more certainly effective, and combining with such efficiency the advantage of not being severe or painful.

It is not to the ordinary ganglion patellæ alone that its use is confined. The operation of the seton is more especially adapted to the indurated ganglion. By this kind of swelling, I mean one in which, from the continued existence of inflammation, the cyst of the tumour has become exceedingly thickened by successive deposits or layers of adhesive matter or fibrine, converting the tumour into an almost solid mass.

These hardened ganglia cause great uneasiness to the subject of them; and incapacitate the person from bearing on the part in kneeling, as well as weaken the limb in the act of extension. The appearance of these tumours, when they are laid open, sufficiently indicates their manner of growth, and also the mode in which the loose bodies, resembling melon seeds, that are often found mixed with their fluid contents, are produced.

The operation usually employed for the care of such indurated cysts on the patella and its ligament, is excision of the entire mass. The operation is easily performed, does not involve the joint in danger, and is effective in removing the disease. When the tumour is small, the operation is quickly performed; but if it be large, and overlap the synovial membrane, a surgeon cannot divest his mind of all risk of wounding the capsular ligament, especially if the base of the cyst be adherent to the subjacent fascia; and the operation requires some cautious dissection. Fortunately, the seton is equally successful in promoting suppuration of the cyst, as it is in the smaller and soft ganglia. But the most gratifying result is the entire disappearance of the hardened coats of the cyst by absorption. The indurated parietes appear to be produced, and to be kept up, by the irritation of the bag; which being filled up by the inflammation and suppuration established by the seton, ceases to act as a cause of irritation, and the absorbents set to work for the removal of the walls of the tumour.—*Guy's Hospital Reports, No. III.*

49. *On the employment of Kreosote in Cancer and Lupus.* By J. R. CORMACK. —Reichenbach, Graefe of Berlin, Cloquet, and others to be noticed, state that they have employed it with great advantage. Graefe in his surgery gives a case of very extensive cancer of the face and palate which was much improved by kreosote; and M. Breschet announced to the Academy of Medicine in Paris, during last year, that he had employed this remedy in a case of cancerous ulceration of the nose, in the Hotel Dieu, with great benefit. M. Tealier applied a saturated solution of kreosote in water to an open cancer situated in the breast of a woman, who was suffering most excruciating pain from it, and it was with a view of alleviating this that he employed the kreosote. The result is interesting. No sooner had the solution come in contact with the ulcerated surfaces, than the patient complained of an acute burning pain in the sore, shooting through the right side of the chest, and extending from the head to the very tips of the toes. This continued for an hour, after which the pain entirely ceased, and the patient enjoyed uninterrupted sleep for ten hours. Subsequent applications uniformly allayed the pain, and under its use the sore assumed a more satisfactory appearance. The same gentleman has used it in various affections of the neck of the uterus. In one case he applied a mixture of one part of kreosote to three of water to an ulcer in that situation. The pain which was immediately produced was of such a nature as to cause the woman to toss about in bed like one in convulsions. To

alleviate her sufferings, he ordered injections of cold water, but the pain did not wholly leave her till the second day, when she was quite free of it, which had not been the case for two months before. The kreosote was continued, but was afterwards used in a less concentrated form, and the patient was doing well, when he reported the case to the *Société de Médecine* of Paris. These cases are interesting from the remarkable effects immediately produced, but are of little importance in enabling us to decide upon the value of kreosote as a remedy in cancer, from their imperfect state. M. Marchal has published a case of cancer of the lip, in which he believes he accomplished a perfect cure by means of kreosote. The ulcer had all the external appearance of cancer, and was attended with the lancinating pains so characteristic of that malady. Besides applying to its surface lint soaked in pure kreosote, he occasionally touched it with caustic; and under this treatment the sore cicatrized, and the lancinating pains ceased. M. Marchal suggests the probability of the caustic inducing the ulcer more readily to take on a healing action under the use of the kreosote, but ascribes to the latter the chief merit of the cure. He states that the application of the pure kreosote occasioned at first very acute pain, and this is the most common occurrence, though it is by no means uniformly to be looked for. In consequence of reading the above case of M. Marchal, I was induced to try the effects of the application of pure kreosote in lupus of the nose. The size of the affected part was rather less than half a sixpence, and had been very slowly increasing for about three years. Upon applying kreosote to this surface, the patient experienced no uneasiness. For about a week it was dressed with lotions of kreosote water, and from time to time touched with undiluted kreosote. For a day or two no change seemed to take place; but after this, the parts surrounding the sore became inflamed, and at the end of the week the ulcer was decidedly larger than previous to the application of the kreosote, and in consequence of the obvious injury done by the treatment it was abandoned.

Professor Wolff of Berlin tried the effects of injections of kreosote water into the vagina, in two cases of cancer of the *uterus*. In both instances, violent pain ensued, and one of the patients was obliged, on this account, after nine days, to refrain from employing it, and the other, after persevering in its use for twenty-six days, was compelled from a like cause to desist. In neither case was there any diminution of the secretion or of the metrorrhagia. One of the patients expired after violent metrorrhagia, but the other died more slowly.

During last summer I saw it tried in the clinical wards of the Surgical Hospital by Professor Syme, in a dreadful case of lupus. The fœtor of the discharge, which was before very great, seemed to be corrected, but besides this, there was apparently no good effect produced. The case, however, was so very bad, that no application could be expected to benefit it,—the articulation of the lower jaw being exposed on one side, and an immense surface involved in the disease.—*Edinburgh Med. and Surg. Journal*, Oct. 1836.

50. *Treatment of Hydrocele by Acupuncture*.—Mr. LEWIS recommends puncturing hydrocele with a *very fine needle*, until a drop of fluid oozes out on withdrawing the instrument, and he says that in three days the hydrocele will completely disappear, no matter in what quantity the fluid may have been collected. Out of upwards of 50 cases treated by Dr. L. by this method, he says there has not been a single instance of failure, neither has there been any consecutive inflammation.

“It may seem almost incredible,” he says, “that a single puncture with the point of a fine needle into an encysted cavity, is sufficient to cause the absorption of the fluid contained therein, but such is the fact. I have punctured an enormous double hydrocele, complicated with rupture; the volume was so great that the penis could not be seen; yet by a single puncture on each side, in three days the fluid had entirely disappeared, and the parts had regained their original size. The simplicity of the operation is such, that I have seen medical men afflicted with hydrocele fearful of having it punctured (through want of confidence in the resources of nature,) lest it should prove a failure, without the aid of the trochar and canula.

“The principle of puncturing with a fine pointed needle is not only applicable to promote the absorption of the fluid in hydrocele, but in every case of *encysted*

dropsy. My worthy and talented friend, Dr. T. Davies, of Broad-street, has lately informed me that he had explored the chest with a grooved needle, in order to convince operating surgeons of the existence of fluid, previous to resorting to the operation of paracentesis thoracis. Having ascertained that fluid existed, he found, to his surprise, that the patients got well by means of the puncture, without having recourse to the usual operation; and so successful has he since been, that he never now employs any other method of emptying the cavity of its fluid. On the same principle the needle may be used with safety and success in many cases of hydrocephalus, and, perhaps, in some tumours.

"In hydrocele the accumulation of water proceeds more slowly after puncturation than after the more sudden emptying by the trochar and canula. Acupuncturation, as hitherto practised, both abroad and in this country, has been on the principle of counter-irritation, and as an agent to give discharge to the water in cellular dropsies. The acupuncturation needle is much larger and rougher than the one I use in the treatment of hydrocele by puncturation; in fact, the needle cannot be too fine, provided it be strong enough to penetrate through the integuments, for the smaller the puncture the less pain and inflammation ensue."—*Lancet*, 7 May, 1836, and 14 Jan. 1837.

The claims of originality of Mr. Lewis to this practice has been contested by several surgeons. Mr. Kingdom stated at a meeting of the London Medical Society, that he had employed the same means several years ago, and that it appears to have been the usual practice of a German surgeon who resided some years ago in London.

Mr. Travers also in a letter in the *London Medical Gazette*, (Feb. 11, 1837,) claims the conception of the same plan, whilst Mr. Robert Keate, in a communication in the *Journal* just quoted, (Feb. 18, 1837) states, that the plan and the practice have been known and acted upon by himself, for very many years, and probably by others. By one other person, he adds, he knows that it was performed, perhaps 20 years ago. This person was a physician, and practised the operation on himself. "At his suggestion," says Mr. R., "I tried it frequently, both at the hospital and in private practice."

OPHTHALMOLOGY.

51. *Treatment of gonorrhœal ophthalmia*.—M. SANSON having found antiphlogistics alone, ineffectual for the cure of gonorrhœal ophthalmia, has adopted the following method of treatment:—He first bleeds to the extent of 24 to 30 ounces; if this is followed by marked benefit, he repeats the bleeding, and applies a great number of leeches around the orbits of the eyes. But if the ophthalmia instead of diminishing, remains stationary or gets worse, M. S. abandons antiphlogistics, and has recourse to excision and cauterization, which he employs in the following manner: The patient is laid upon a bed, and his head fixed on a pillow by an assistant; another assistant separates the lids and everts them. The surgeon seated in front of the patient, then seizes with dissecting forceps, the prominent portions of the ocular conjunctiva, and excises with curved scissors, as completely as possible, all the swollen portions of this membrane as far as the point where it is reflected upon the globe of the eye. The blood is now allowed to flow; the parts are afterwards carefully washed and a pencil of nitrate of silver is then *slowly* passed over the whole external surface of both eyelids, which are kept everted. The parts are then carefully washed with water to remove all portions of caustic which not having combined with the tissues might act upon the cornea, and the lids are then replaced. The subsequent treatment consists in bleeding, pediluvium, cold applications, &c. The pain which at first is extremely severe, is soon assuaged.—*Journ. de Méd. et de Chirug. Prat.*, October, 1836.

52. *Amaurosis cured by electro-puncture*.—Dr. ROSAS in his report of the Ophthalmological clinic of Vienna, during the session of 1832-3, gives an interesting case of complete amaurosis, occurring in a tanner 47 years of age, of 16 years duration,

and preceded by violent pain in both eyes, cured by electro-puncture. This patient entered the hospital in 1832, and was so much improved by acupuncture, as to be able to distinguish light from darkness. The treatment was now interrupted for two months, on account of the vacation, and on the 11th of October the supra-orbital nerve of the right side was acupunctured. During the operation the patient perceived some sparks in the eye, and on the 11th, when it was repeated, he felt a slight shivering along the vertebral column. On the 13th the left, on the 14th the right supra-orbital, and latterly the infra-orbital nerves, were acupunctured. These were followed by sparks in the eyes and shivering along the spine. On the 17th the galvano-punctor was employed, for the first time, and four plates of Volta's pile were used. The same nerves were touched, and after four minutes the patient felt some febrile *frisson* sparks in the eye, and a flow of tears. On the 19th, after a similar operation on the right side, the patient began to see. On the following morning, the inner moiety of the visual field was somewhat troubled, but within ten hours this phenomenon diminished, and towards evening the patient, to his great joy, could distinguish all large objects.

On the 21st the operation was repeated on the left side for two minutes and a half; his eyes continued watery for the whole day. On the morning of the 22nd, all objects were covered with a thick veil, but this soon went off, and the patient could see so clearly with both eyes as to distinguish a small silver coin. The galvano-puncture was reapplied from time to time during the months of November, December, and January. On the 11th of February it was carried to twenty-six plates of the pile; at this time the patient was fully able to distinguish small objects, and even their colour, &c.—*Lancet*, Aug. 22, 1836.

MIDWIFERY.

53. *Case of spontaneous version.* By Dr. FR. NIESS of Vöhl.—A healthy stout-made woman, æt. 21, who had an easy and favorable labour eighteen months previously, enjoyed good health. On the 9th of October, a period which corresponded with her own computation, she first felt slight pains, during which the waters drained very slowly, after the lapse of several hours. A midwife was called in, but the patient would not permit her to make any examination on that day; observing that the child would soon be born. During the night, when the pains had become stronger, the midwife insisted on making an examination, and, having discovered an arm-presentation, advised her to send for me: this, however, was not done until the following day at noon. When I arrived, about three o'clock in the afternoon, I found the left arm presenting, with the hand protruded from the vulva: the arm was greatly swollen and livid, the palm turned towards the right thigh of the mother. The os uteri had contracted on the arm, so that I could only pass a single finger round it. The womb was closely applied to the body of the child, and I could ascertain, without difficulty, that the head lay over the horizontal ramus of the pubis, towards the right side of the mother, and the feet towards the left side.

According to the midwife's account, the pains had been for several hours violent, frequent, and extremely severe; still the arm made no progress. The general state of the patient was favourable: she merely complained of considerable thirst, and expressed great anxiety about her condition. As I could not think of turning under such circumstances, I proceeded to take proper steps to diminish and regulate the pains. Having premised venesection, as the patient was very robust and plethoric, I gave repeated doses of aqua lauro-cerasi, ordered friction to the abdomen, with a liniment composed of olive-oil and tincture of opium, and tepid oleaginous injections to be frequently thrown up the vagina. Under the continued use of these means, the pains appeared, after the lapse of two hours, to diminish in intensity and severity, and the os uteri had become more yielding; and, as the woman became every moment more impatient and more importunate for assistance, I decided on attempting to turn the child. But, on this and subsequent trials, I found it impossible to pass my hand into the uterus; the irritation produced by attempting to introduce it renewed the pains, and the os uteri was so

powerfully contracted on the arm of the child, that a forcible introduction of the hand would have been attended with great risk of rupturing the uterus.

Under these circumstances, and when I found the uterus began to grow more sensible to the touch, I determined to have the advice of another physician, and went to a neighbouring house for the purpose of sending a messenger to him. On my return, somewhat less than an hour afterwards, I was surprised to find the state of things greatly altered. The swollen livid arm, along with the shoulder, had been pushed forwards considerably, and the back had entered the pelvis. With strong pains, accompanied by convulsive tremors of the limbs, the back continued to descend for a quarter of an hour, while the shoulder remained fixed beneath the pubis; and a few minutes after the buttock was evolved, sweeping out under the back with a circular motion. The lower extremities came away almost at the same instant; soon afterwards the trunk, arms, and head; then the placenta, the expulsion of which was followed by a moderate discharge of blood, which soon ceased. The child arrived at its full time, and of very considerable size, exhibited no sign of life: the left shoulder, and the parts in its vicinity, were greatly swollen and ecchymosed. The patient went on favourably afterwards, the external parts of generation were at first very much swelled, but she was able to leave her bed on the sixth day.—*B. and F. Med. Rev.* Jan. 1837, from *Neue Zeitsch. für Geburtskunde*, B. iii. H. 3.

54. *Case of Tubal Pregnancy.*—Dr. DREJER, of Copenhagen, has recorded an interesting case of this in the 15th Vol. of *Siebold's Journal of Midwifery*. The subject of it was a mason's wife, aged 33, the mother of five children, and who believed herself to be in the 5th month of another pregnancy, having distinctly felt the movements of the child, though for a fortnight they had altogether ceased,—was suddenly seized, after a breakfast consisting of tea and biscuit, with a burning pain in the abdomen, speedily followed by rigors, vomiting, and great prostration of strength. A physician residing in the neighbourhood prescribed a julep to allay the vomiting, but being himself indisposed, he did not see her again. In the afternoon she was visited by Dr. Drejer, who found her in a state of syncope and with every sign of anæmia, although no blood had passed from her. On recovering consciousness, she complained of agonizing pain in the abdomen and of retention of urine. There was no distension of the abdomen, and on examination, the uterus was ascertained to be in its normal situation with the os uteri somewhat open, whence Dr. Drejer inferred that his patient was mistaken in supposing herself pregnant; and, attributing her sufferings to spasms, he directed the julep to be continued with the addition of a little musk and liq. anodyn. She died quietly an hour afterwards.

Sectio Cadaveris.—On pressing upon the abdomen, a hard rounded body was felt in the hypogastric region. Within the abdomen was observed, first, a large quantity of extravasated blood; this being removed, the placenta was discovered; it presented the appearance of a convex fleshy body, and was inserted into the middle of the right fallopian tube, which was bursted; a fœtus of the female sex, weighing $6\frac{1}{2}$ ozs., and attached to the placenta by the umbilical cord, lay among the intestines. The placenta was $10\frac{1}{2}$ inches in circumference. It was remarkable that the broad ligament and fallopian tube of the right side did not pass off from the uterus as they normally do, but proceeded from that part of the organ immediately adjoining the neck. It was not possible to pass a probe through either tube. The uterus, which lay in its natural position, was somewhat enlarged, the cervix filled with a white gelatinous substance, the os tincæ open, and the uterine cavity rather dilated and lined by a thick pale membrane. A corpus luteum was found in the left ovary, but with the most minute examination no traces of one could be discovered in the right, a circumstance sufficiently perplexing, for as every conception necessarily produces a corpus luteum, and as the one found was of the size and appearance usual in the 5th month of pregnancy, it is not easy to conceive how the ovum could have got from the left ovary into the right fallopian tube. It may be remarked that the patient in this case was subject to hysteria, and for some time had suffered from a pulmonary affection, but during this pregnancy, she had not complained of repeated attacks of pain in the belly, or of an impossibility of lying on the right side.—*Med. Chirurg. Rev.*, Jan. 1837.

MEDICAL JURISPRUDENCE AND POLICE.

55. *Action of Iodide of Lead.*—The soluble compounds of iodine are poisonous, while those which are insoluble, or little soluble, are less deteriorating to the animal frame. Anxious to know the effect of the yellow iodide of lead, M. PATON administered 12 grains to a cat of moderate size. In 4 hours the animal did not seem to experience any inconvenience: then 12 other grains were given; in 12 hours the animal became uneasy, and constantly refused every kind of food. It appeared to suffer in the kidneys; latterly it was attacked with violent colic, which caused it to jump up to great heights. It died 3 days after taking the poison, suffering dreadfully. The autopsy made 12 hours after, detected no trace of irritation; the lungs were of a pale rose colour; the stomach was empty, and contained a lumbricus; a yellow spot was observed at the pylorus; the intestines, which contained very little matter, were occupied by 3 *tœniæ*. Paton examined the interior of the stomach chemically, but was unable to detect any poison. He collected the *fæces*, the matter in the intestines; no fragment of the iodide was visible. They were then boiled in distilled water, the liquid filtered and decolorized by charcoal, but no effect was produced by tests for lead. The matter remaining in the filter was digested in dilute nitric acid; the solution was filtered; a precipitate was obtained on pouring in a solution of chromate of potash. The liquid was evaporated; the residue calcined along with what was left by the evaporation of the water, and the whole brought in contact with dilute nitric acid. Nitrous gas was disengaged, and the solution acted to re-agents like the solution of the salts of lead. Hence Paton concludes, that the iodide of lead introduced into the stomach is partly absorbed, and that it is this portion which produces death, and the remainder passing into the intestines may be detected by the methods described.—*B. Ann. Med.*, March 3d, 1837, and *Journ. de Chimie Méd.* Jan. 1837.

56. *Mode of detecting Arsenic in Bread.*—M. PATON, who has been examining this subject, recommends crumbling the bread, digesting it in hot water for half an hour, filtering, adding then an infusion of galls made in the cold; the solution is filtered, and the clear liquor tested for the arsenious acid.—*B. Ann. of Med.* Feb. 24, 1837.

57. *Poisoning with muriate of Baryta.* The following rare case of fatal poisoning with muriate of baryta is related by Dr. WACH of Merseburg in Henke's *Zeitschrift für die Staatsarzneikunde* for 1835. The wife of a manufacturing chemist, æt. 42, in the absence of her master took half an ounce of powdered muriate of baryta, mistaking it for glauber salts, and having dissolved it in warm water swallowed the whole at once. Soon after she was seized with nausea, retching, twitching of the facial muscles, and convulsive twitching of the hands and feet, to which succeeded a violent vomiting of a muco-aqueous fluid, which the servant in attendance threw away. These symptoms continued with increasing severity, the twitching of the face and of all the limbs grew rapidly worse, and, before the nearest physician had arrived, she expired under the most violent convulsions, scarcely two hours from the time of taking the salt.

Sectio cadaveris.—The body was rather fat, the mouth rather closed, the features were distorted, and the fingers spasmodically contracted—abdomen and præcordia sunk. In the cavity of the abdomen the great and the small omentum unusually red, their vessels being filled with blood, the stomach contracted, and the vasa brevia turgid with blood—the peritoneal coat of the stomach of a dark brown colour and much inflamed. At the distance of $3\frac{1}{2}$ inches (Parisian measure), from the cardiac orifice, and 9 lines from the smaller curvature on the posterior wall, there was a perforation of the coats of the stomach of an oval form, and measuring three lines in diameter on the external surface, and $7\frac{1}{2}$ on the inner. The edges were very much swollen, and the mucous membrane for the space of two inches around was thickened and covered, not with pus, but a bloody mucus. The entire mucous membrane of the stomach was highly inflamed, and covered with mucous and coagulated blood. The muscular coat, with the exception of the place where the perforation existed, was no where softened or at-

tenuated, but in a normal state. The cardia and pylorus, the duodenum, jejunum, and ilium, were all in a high state of inflammation, the mucous membrane softened, thickened, and smeared with a bloody mucus. The small intestines contained several ounces of a brownish-red slimy fluid, mingled with clotted blood. The colon throughout its entire length was morbidly contracted, so that its calibre was even one-third less than that of the small intestine. Many broad ecchymosed patches, from half an inch to an inch in length, were observed on its inner surface. The pharynx and œsophagus were slightly inflamed. The convex surface of the liver adhered throughout to the diaphragm, and the blood flowing from incisions in this organ and in the spleen was thick and of a very dark colour. In the gall-bladder was a pale-yellow gall-stone of the size of a hazel-nut; the gall itself pale-yellow and watery. In the uterus were many little clots of coagulated blood, the blood-vessels of the ovaries turgid, the external and internal parts of generation in the virginal state. The lungs and brain were congested with thick black blood.

Dr. WACH observes that the adhesions between the liver and diaphragm, the gall-stone, the morbid condition of the gall, and the contracted state of the large intestine, in all probability existed at the time the poison was taken, and that the appearances in the uterus and ovaries might be dependent on the menstrual discharge; but, he adds, all the other morbid changes, including the perforation of the stomach, were certainly occasioned by the irritant action of the poison.—*Medico-Chirurg. Review*, Jan. 1837.

EPIDEMICS—INFLUENZA.

58. *Influenza*.—Our readers have, of course, learned through the newspapers of the prevalence in Great Britain and France during the past winter, of an Influenza, though we believe that no account from professional sources has as yet been published in this country. This epidemic commenced in London about the 1st of January, and prevailed during the whole of that and the greater part of the succeeding month. A very large proportion of the population were attacked by it, and the mortality was considerable. As in all probability it will reach this country, we have carefully gleaned from our Journals every thing in relation to it of interest which they contain, in order to satisfy the curiosity which we are sure our readers must feel for information on the subject.

59. *Debate in the London Medical Society relative to the Influenza*. January 30, 1837.—Dr. CLUTTERBUCK this evening presented to the Society a paper on the present epidemic. After speaking of the great interest attaching to the subject, the author remarked that epidemics of this kind had been known for about 300 years, and that there had probably been many before, not recorded, though it was likely that their history would be of little benefit as affording precedents for the treatment of the present general catarrh, since all epidemics were more or less modified by circumstances. In the present epidemic the great outline of symptoms was strikingly similar in the generality of cases, though variations existed in particular instances. It generally commenced with a chill, followed by rigors, then heat and dryness of the skin, sneezing, lachrymation, and pains in the head, back, and limbs, with a frequent and small pulse, white tongue, and watchfulness. It bore in many particulars a strong likeness to the measles, and the author had occasionally expected to see the eruption of that disease in cases which occurred in children, but of course he did not detect it. In some patients there was sore throat; in more severe ones, vomiting and delirium; and in one case he had seen actual phrenitis. The symptoms, however, were, generally, slight and trivial, like those of common catarrh, generally lasting ten or twelve days. If the bed was kept for a couple of days a perspiration broke out, and the case went on well. The nature of the disease, he should say, was specific, arising from a specific cause—using the word *specific* to distinguish it from common disease—taking on all the characters of ordinary catarrh, with the addition of cerebral disease. We were ignorant of the cause of the disease, but it was evidently, directly or indirectly, connected with atmospheric changes; but whether resulting from a phy-

sical change in the atmosphere itself, or from the air becoming the vehicle of some noxious matter, was a mystery. All means of prevention were, therefore, unavailable. In the *treatment*, its specific nature must not be forgotten. It *would* run its course. The object, therefore, was simply to palliate, not to aim at a cure. In the majority of cases little or no medical treatment was required, but where the fever ran high, or the pain in the head was intense, or respiration was difficult, or pain in the chest was severe, with harassing cough, a high degree of arterial excitement was denoted, requiring antiphlogistic treatment, and blood-letting, as the most effectual means, was to be resorted to. This should be employed as early as possible. Eight or ten ounces taken away during the excitement considerably mitigated all the symptoms; the pulse became slower, the skin moist, and, if the lungs were affected, that sub-acute inflammatory state which engendered phthisis was prevented. If, at a later period of the attack, inflammatory symptoms again appeared, bleeding was again to be employed, though not to the same extent as at first. Regarding the strength and age of the patient, the author did not consider that either infancy or old age opposed decided objections to bleeding, where the symptoms appeared to require it; but in those two conditions it was necessary to resort to the depletion early. He did not place much reliance on the other means which had been recommended, such as tartar emetic, mercury, or camphor. Indeed, he had seen a case in which the disease attacked a person affected with ptyalism, without mitigation of the severity of the epidemic. Blistering, after the venesection, was occasionally useful. Opium must be used with the greatest caution. In old catarrh little good could be done. True, stimulants might be employed, but to stimulate was not to strengthen. The blood, in all cases, presented the usual inflammatory characters.

Mr. DENDY observed, that, according to his experience, blood-letting, in old persons and children, did harm. The greatest cause of fatality was the quantity of mucus collected in the air-passages, producing suffocation. In one or two instances which he had seen, where every symptom of arachnitis existed, he had only depleted with a few leeches, or a single cupping glass, yet even the abstraction of three or four ounces of blood thus was not borne well. He considered that the chief object was to check the excessive secretion in the air passages. On what did that excessive secretion depend, and what was the best remedy for it? He had tried, at the expiration of two or three days, and after the use of purgatives and diluents, two or three grains of quinine, given three or four times daily, and though not so successful as he expected it would be, it, nevertheless, in some instances, did good.

Mr. MERYON had found hot-air baths, at the commencement of the attack, useful in two or three cases. He had noticed that all his patients complained of an irritable tingling about the nares, or the eyelids, during the last days of the disease. Ipecacuanha was the most useful medicine in bringing up the mucus. He had had a remarkable case of a gentleman whose body was affected with influenza only on one side. Half his tongue was furred, and he had neuralgic pain on one side of his face and body only.

Mr. PROCTER had suffered severely from the disease, which, in his opinion, was not inflammatory. He experienced such decided rigors at the commencement, with such a languor of the circulation in the extremities, that even hot flannels did not impart warmth to them. Perspiration followed this symptom, and spontaneously. He had also had shifting pains in some parts of the muscular system, with excessive pain about the frontal and other sinuses, much aggravated on coughing, with neuralgic pains of the face on the right side. The disease in him was intermittent, leaving him in the day, during the hurry and fatigue of business, and returning at night, and lasting until two or three o'clock in the morning. He found that various pains about the chest and throat gave way before the counter-irritation of a mustard plaister. He subsequently went into a state bordering on the typhus mitior. He took four grains of quinine three times a-day, and was quite well in a day or two. He had never bled in any case, from fear of the subsequent debility.

Dr. CLUTTERBUCK considered that this was a mistaken fear. The typhoid state alluded to would be prevented by judicious venesection.

Mr. HOWELL had bled young and robust patients; and he thought that the disease was thus mitigated and shortened. Where he did not bleed, tartar emetic

and sulphate of magnesia he had found extremely useful. The cough was always much relieved by purgation. He thought that blistering was useful. Instances of sudden death had occurred in this disease, such as he had noticed in no other. Patients who appeared to be going on well in the morning, sank and died without any evident additional cause in the evening.

Mr. BRYANT had been afraid of employing active depletory measures, from observing the remarkable depression of power in all cases of this affection. He did not mean to say that he had not seen a single case in which blood-letting might not have been employed with safety, but he should say, that in the generality of instances it could not be resorted to without danger. The persons whom he had seen to perish were old, and previously affected with asthma, or some other chronic affection of the lungs. He had known patients to die in the manner mentioned by Mr. Howell, but they were either children or old persons. After death the bronchial tubes were found completely filled with mucus. He feared that the recommendation of blood-letting, by Dr. Clutterbuck, would produce mischief, by causing bleeding to be resorted to too indiscriminately.

Dr. CLUTTERBUCK said, that he had not grounded his opinion on two, or even on twenty cases. Blood-letting, when employed with sufficient caution, was as safe as it was useful, and was not to be put aside by mere negative evidence. It should not be employed indiscriminately, or it would, indeed, do harm. The objection to blood-letting arose from the want of observing a distinction between cases. Of course, he would not bleed in the chronic bronchitis of old people, in which the mucous membrane was thickened, and interfered with the respiration.

Mr. DENDY considered that no doubt existed that many cases might occur in which venesection would be beneficial. He had only employed it for one patient, a young lady, in whom pleuritis had supervened on the influenza, and in that case he felt no hesitation in taking twelve ounces of blood, and she recovered as quickly as other patients. He had witnessed the post-mortem examination of a woman who had died suddenly, as in Mr. Howell's cases, in whom there was a dark crimson hue of the fauces, with inflammation and points of ulceration in the trachea, down to the bifurcation of the bronchi. "The lungs were drowned in mucus." He had not yet lost a case, though he feared that he should lose two, one an old person, and one a child. These cases had set in since Friday week, on which day the epidemic had assumed, he thought, a worse character.

Mr. BRYANT said, that the great majority of cases witnessed by him, occurred among eight hundred paupers, who laboured under mental depression, from their condition. This would effect the character of the disease. In the greater number of cases he did not hesitate to say that depletory means could not be safely resorted to. Two fatal cases had occurred in his private practice, but neither of them exhibited a symptom requiring the use of the lancet.

February 6th, 1837. The debate of the evening was resumed.

Mr. HEADLAND thought it would be well for the members of the Society to state their experience with regard to the treatment to be pursued in the present epidemic, particularly as Dr. Clutterbuck had seen so many cases requiring the lancet, while on the other hand gentlemen of very extensive practice had not met with a case requiring its use. On reflecting on all the cases which he had seen or heard of, he believed that most of the fatal cases had occurred in patients who had either lost blood, were blistered, or subjected to active depletory treatment, such as large doses of calomel and tartarized antimony; and that few had died when these agents had not been resorted to. He alluded to blisters, more particularly with regard to children, as he had seen two cases in which mortification had come on after their application for the present disease. The plan he had pursued with the greatest success was the application of mustard poultices to the more urgently affected parts, keeping the patients in a warm atmosphere, attention to the bowels, and the after use of hyoscyamus.

Mr. JONES considered that the great difference of opinion respecting the affection might be accounted for easily. In this epidemic, as in typhus, cases occurred in which some particular organ became inflamed and required blood-letting; the difference was as to the number of such cases. Dr. Clutterbuck had seen many, other practitioners few, or none. The majority of cases, however, were undoubtedly slight.

Dr. BUREAUD RIOFFREY could hardly think the disease so slight, the great in-

crease of deaths in London he thought proved the contrary. He had only bled in one case, in which there was evident phrenitis; he had taken blood in two successive days, and the patient did well, with the after use of diluents. In five cases of asthma, coming on with the influenza, digitalis he had found of great service. There was no general plan of treatment to be laid down, as the cases varied so much. He inquired the experience of members in the pathology of the affection.

Mr. PROCTOR considered the affection rather as a disturbance of the nervous than the sanguineous circulation. He had seen no case in which there was any thing like phrenitis;* there had been, in some instances, great irritation of the lungs, such as is observed in measles, but not such as required the lancet. He had depended chiefly on tartar emetic and ipecacuanha in small doses, for keeping up that perspiration which appeared the natural outlet to the disease. He considered that if patients generally got well without "blood-letting," such fact was positive, and not "negative evidence" against the lancet.

Dr. STEWART considered opinions did not vary more than did cases. In this epidemic he had seen few cases in which venesection would be borne. He had, in some cases in which pleuritis had come on after the state of asphyxia, employed a few leeches with advantage, but he had gone no further with depleting measures. The first symptoms of the disease had been well compared to the measles; he considered the secondary ones partook very much of the character of whooping-cough. As a general rule he considered active treatment was not necessary, but rather an attentive watching of the case.

Mr. KINGDON had not seen the affection to the extent some of the members had done. He considered, so far as his experience went, that it could scarcely be spoken of as a disease at all; but as some atmospheric influence, materially depressing the powers of life, and bringing into action those maladies which individuals had a tendency to suffer, accompanied, in all cases, with fever and catarrh. Generally, from the depressing nature of the affection, blood-letting was not required, but in some cases it would be found necessary to employ it to a small extent. Dr. Clutterbuck advocated the cautious abstraction of small quantities of blood only in severe cases in their early, excited stage, and no doubt he had found such treatment beneficial.

Mr. CLIFTON said, that so far as his experience went, the present epidemic did not bear bleeding well. The discrepancy of opinion regarding treatment, most likely resulted from the difference in cases. Dr. Clutterbuck was likely to meet with severer cases than the general practitioner, and this might, in some degree, account for the active treatment he had employed. In the epidemic of 1833 he (Mr. C.) had taken blood in only two cases, and these were longer in recovering than others. He had not found it necessary, in the present instance, to bleed in any case. He was inclined to think the disease might vary in different localities; in his district (Islington) the disease assumed a milder aspect than in situations near the water side. In the general plan of treatment he had ordered resort to bed for 48 hours, with small doses of antimonial medicines, diluents, and attention to the bowels. After proceeding with this during that space, a slightly-sustaining plan he had found useful; the cough did not contraindicate such treatment; he had found it with characters more resembling spasmodic asthma than ordinary catarrh. He had been careful of checking the cough with opiates, as he considered it rather useful than otherwise. The pains in the head, which were chiefly confined to the frontal sinuses, he had found give way before the simple fomentations of warm water. In some cases, of course, inflammation might supervene on some of these symptoms, and require depletion; he had not, however, in any case he had treated, found such to be the fact.

Mr. BRYANT had examined only five fatal cases. In all their minute divisions, the bronchial tubes were full of a viscid secretion. In cutting into the tubes, the mucous membrane was found thicker and higher coloured than usual. There was emphysema of the lungs, and in one or two cases solidification. He could well suppose that cases might occur in which depletion might be necessary, but he had not seen such. He had seen in many cases, where the lungs were overlaboured, the administration of calomel with ipecacuanha very beneficial, regulating their continuance by cautiously watching their effects.

Mr. MOORE had adopted the plan of treatment recommended by Sydenham, and

* Dr. James Johnson states that he has seen phrenitis attendant upon the epidemic.—Ed.

pursued in the epidemic which prevailed in his time. He, (Mr. M.), had treated it as a remittent fever with catarrh. In simple cases, the use of sudorifics and tonics he had found successful; but where the lungs in aged persons had been previously affected, or were clogged with mucus, calomel combined with elaterium he had found of great service. The most violent case he had seen was that of a lady 65 years of age; in that case her physician had given her five grains of calomel, with half a grain of elaterium; she was in a dreadful state, her lips were blue, her countenance injected and suffused, and her pulse intermitting, as though she was dying. Next day she evacuated about half a gallon of watery fæces, and soon recovered. He, (Mr. M.), considered that the affection might generally be treated as remittent fever; the tonic plan might be resorted to early. He had found quinine the best tonic. He had seen no fatal cases except those which were complicated with diseased heart.

Mr. HEADLAND had blamed *large* doses of calomel and antimony. He did not say that medical aid was of no good, but that, in very numerous instances, persons had recovered without any assistance from medicine. He was glad to find that the general opinion of the Society was in favour of the affection not being of an ordinary inflammatory kind, and that bleeding in general was neither safe nor called for. He did not conceive the mortality had been so great as did Dr. Bureaud, considering the immense population of London.

Dr. WHITING, in the first place, referred to the prevailing opinion, that the epidemic depended altogether on atmospheric influence. He would not deny that it might have originated from such cause, but it was not kept up by it. It did not occur in different places at the same time, but had a progressive character; for instance, it appeared and was very prevalent in the Borough of Southwark, some days before it had reached Kensington, and when most prevalent in the latter place, had entirely ceased in the former. It spread from place to place, and, like other epidemics, he considered that when once established, it was spread universally by contagion. The disease was essentially of an inflammatory character. It was a fever accompanied with inflammation, generally in the mucous tissues, but he had occasionally seen it affect the serous tissues. The inflammation, however, was not of the common character, but one *sui generis*, and requiring a particular kind of treatment. It was a disease which would run its course, and could only be palliated, not cured, by art. He should say, speaking generally, and from his own experience, that it was a mild disease. The mortality which had taken place, appeared to be dependent upon two causes, First, a congested state of the membranes of the bronchial tubes, or air cells, obstructing the circulation. The second consisted in the obstruction to respiration produced by the excessive secretion of mucus. He had not seen death result from other causes; and in no instance from "simple debility." In some cases he had found blood-letting absolutely necessary and successful in the congestive state; it was, therefore, when cautiously employed, in some cases of great benefit. He had bled in six cases and none had died. Auscultation was valuable as a means of forming a prognosis in the affection; he had found, when one lung was affected, the patient likely to recover, but when both were involved he generally perished.

Mr. CLIFTON could not agree that the disease was contagious; he had seen whole families simultaneously affected, if any member escaped at first, he generally escaped altogether.—*Lancet*, Feb. 18, 1837.

60. *Notice of the Influenza of January and February, 1837.*—The following summary drawn up by Dr. John Clendinning, of what was observed in the practice of the St. Marylebone Infirmary, with regard to this epidemic, appeared in the *London Medical Gazette* of the 18th of February last.

"*Progress of the epidemic.*—The first cases of influenza admitted into the Infirmary, and noted in the official journal, occurred January 2nd.

Cases admitted in week ending 6th January	-	-	-	16
Ditto, ditto, 13th	-	-	-	64
Ditto, ditto, 20th	-	-	-	66
Ditto, ditto, 27th	-	-	-	46
Ditto, ditto, 3d February	-	-	-	32
Ditto, ditto, 10th, about	-	-	-	20
				Total, 244

"By a statement with which I have been favoured by my friend, Dr. Boyd, of

the St. Marylebone Infirmary, it appears that between Monday, January 9, and Saturday, February 4, 414 cases of influenza were admitted on the out-patient home-list, viz:—

Week ending 14th January	- - - - -	161
Ditto, 21st	- - - - -	139
Ditto, 28th	- - - - -	84
Ditto, 4th February	- - - - -	34

“And the workhouse practice and morning out-patients’ practice advanced numerically, and receded apparently along with the Infirmary and home practices. So that the epidemic would appear to have begun with January, and declined in about the usual period of 5 to 6 weeks.

“*Symptoms.*—Of course, amongst such a number, various combinations of symptoms must have happened. Confining my remarks to those that were admitted into the Infirmary, of whom only I had personal cognisance, I should say that the cases varied principally according as they were simple or complicated,—the former being tolerably uniform in their symptoms, the latter various as the complicating diseases. Of the former the symptoms are familiar, and require no detailed description from me, viz. at first chilliness, lassitude, and depression or anxiety, followed in some hours by more or less of heat, gravedo, head-ache, coryza, pain of back and limbs, soreness, sometimes extreme, of the chest and throat, with cough, smart fever, often coated tongue, nausea, and vomiting; sometimes gastro-enteritic irritation, with diarrhœa; occasionally transient delirium; generally wandering pains of trunk, especially about the sides. Such were the principal symptoms of the uncomplicated cases for twenty-four, thirty-six, or forty-eight hours after admission; after which expectoration became easier, the skin softer and moister, and cough and headache less troublesome, when the fever gave way, so that in three or four days nothing but weakness, with a tiresome cough, remained in a majority of instances,—a weakness, however, greatly disproportionate to the duration or danger of the disease. Two-fifths of the cases noted as influenza by the house-surgeon were of the kind just glanced at; the remaining three-fifths were complicated as follows: viz. with

Pleuropneumonia	- - - - -	36
Bronchitis, mostly chronic, and combined with Emphysema Pulm. and Morb. Cord.	- - - - -	52
Phthisis	- - - - -	25
Pleuritis	- - - - -	5
Fever, in several instances Typhoid	- - - - -	25
Rheumatism, Chron.	- - - - -	2
Morb. Chron. Ventriculi	- - - - -	3
Croup	- - - - -	3
Ptyalism	- - - - -	1
Encephalitis	- - - - -	1
Morb. Chron. Cord.	- - - - -	3
Pericarditis	- - - - -	1

“Of course the symptoms must have varied much in the second class, or complicated cases. In numerous instances the complicating diseases were at first so masked by the influenza, as not to be easily recognisable. Without the aid of the pleximeter or finger and ear-tube, indeed, it appeared to me nearly impossible in several cases to arrive at a safe or satisfactory diagnosis, more especially in persons advanced in life. The irregularity observed in the course of the functional signs did not in any material degree of course extend to the physical signs; so that pneumonia, phthisis, disease of the heart, and hypertrophy of the ramifications of the bronchus (or emphysema pulm, c. catarrh. chron.,) which were the most frequent and formidable complications, were generally as easily identified as usual. In every case the influenza, if distinguished at all, was readily detected, whatever its complications, if attended to within the first day or two; after that period it often, in bad cases, became absorbed in the effects of the graver complicating disease.

“*Mortality.*—The mortality with us, as elsewhere, amongst populations embracing indifferently individuals of all ages, sound and unsound, was very considerable during the period so often specified above. I do not know that any simple case was lost from influenza unaided by previous disease or subsequent complication; but so large a portion of the subjects of our influenza had previously

tuberculated lungs, diseased bronchial ramifications or hypertrophy of the heart, and the instances in which pleuropneumonia was excited were so numerous, that	
We lost in the six weeks, from 31st December, altogether	118
Cases, to which must be added, deaths in the infirm wards of the work-house, same period	21
In the out-door practice also there were some deaths (exclusive of the mortality of the cases transferred to the Infirmary), amounting in the same period to	40
Giving a grand total mortality of	179

Table of Ages of all Cases admitted into the Wards of the Infirmary, between Dec. 30th, 1836, and Feb. 10th, 1837.

Ages of all cases.	Admissions.		Deaths of the admitted.		Influenza Cases: both sexes.
	Male.	Female.	Male.	Female.	
Under 12 months . .	5	4	1	2	5
1 to 5 years	15	5	—	—	3
5 — 10	17	24	—	1	15
10 — 20	40	33	3	2	35
20 — 30	21	40	3	5	28
30 — 40	34	26	11	4	33
40 — 50	27	27	10	7	26
50 — 60	36	25	14	8	41
60 — 70	22	30	6	10	35
70 and upwards . .	21	11	9	2	26

Remarks on the Table of Ages. From the preceding table it would appear that aged persons have enjoyed no such immunities during the late epidemic as they have been found, or, for want of counting, perhaps, supposed to do in former epidemics. More than half of the cases were above 40, while a fourth part nearly were above 60. But the table represents the case too favourably for the other extreme of life, owing to the nursery and school children having usually not been so severely affected as to require hospital treatment. Another generally received opinion, however, is confirmed by our experience, viz. the potency of pectoral disease as a predisposing cause; this appears strikingly from the table of complications. For though the complicated cases were received into the Infirmary in much larger proportion, of course, than the simple cases, yet the number of the former is too considerable to be overlooked, or attributed to universality of diffusion of the epidemic causes, rather than to peculiar susceptibility in the subjects.

"I have added the deaths of all diseases, but none for influenza separately, for the obvious reason that influenza proper produced no deaths.

"Amongst the causes I have seen no reason to reckon contagion; perhaps I have not looked sufficiently, or inquired for it. Like all other epidemic diseases, the present, whether contagious or not, certainly commenced at first without contagion, and has probably, as I think, been exclusively reproduced and continued by recurrences of one or more of its first causes: what those first and essential causes are, I think with Pringle (*Med. Obs. Inq.* vol. vi.) is still a problem for solution.

Morbid Appearances.—During the epidemic numerous opportunities presented themselves of investigating its anatomical characters; and in every instance I found that the fatal result might be attributed to previous disease, or to organic deterioration from lapse of years. The youngest was a female, 8 years old, who sank under double pneumonia supervening on tuberculation. There were a male and a female between 20 and 30; a male and a female between 30 and 40; a male and two females between 40 and 50; between 50 and 60 there were five males and two females; and between 60 and 70, six males and one female.

"The complicating diseases were—

Chronic disease, with enlargement of the heart and bronchial ramifications, without acute pulmonic disease 9

Chronic disease of the heart and bronchia, with recent pleuro-pneumonia 6

Chronic disease of the heart, with phthisis (1), or recent pericarditis (1)	2
Pneumonia and pericarditis - - - - -	1
Phthisis with pneumonia - - - - -	1
Pneumonia - - - - -	1
Pneumonia with suppuration of kidneys - - - - -	1
Pneumonia, morb. corb., and arachnitis - - - - -	1

I observed nothing constant in the post-mortem appearances but extreme injection of the trachea and all its branches, and in several cases thickening of the mucous lining of the passages. But those are nothing more than are, according to my observation, to be met with in a greater or less degree in almost every case of asthma, chronic catarrh, and old disease of the heart. It may be thought singular that disease of the heart should have occurred so often, much oftener than phthisis, being eighteen times out of twenty-two; and I should probably, some twelvemonths or more since, have been struck myself by such a statement. But it is undoubtedly true, that disease of the heart frequently escapes the observer who trusts to his eye as a means of admeasurement. When, as often happens, there is no pericarditis, nor any valvular disease, and when hypertrophy, if existing, is distributed pretty equally over the organ, there is a great chance of its escaping notice, unless very considerable; more especially if the inspector have defective information respecting the health of the deceased. To guard against error from that quarter, I have for some time weighed every subject inspected on account of disease of the heart, entire in the first instance, and then after a careful examination of the pectoral viscera, weighed the heart separately, after washing, and in this way have satisfied myself that amongst the labouring classes at least, hypertrophy of that organ is a still more common and fatal disorder than many or most physicians believe.

Treatment.—Regarding the simple influenza cases I have little to say. With warmth, water gruel for food, and repose in bed for a couple of days, they were usually convalescent, or about to be so, whatever might be the medication employed, provided only that medication were not energetic. “Res fuit herclé diætæ potius accuratæ ac debiti regiminis plerumque, quam medicinæ elaboratæ,” (Huxham de ære, &c.) like its predecessor of 1743: occasionally, however, like the epidemic just referred to, “multo plus curæ atque diligentiae poposcit.” In a great majority of cases, nearly all indeed, it was thought advisable to blister the chest, which usually gave to the bronchial irritation the relief desired. In some also leeching or cupping was cautiously employed; where the pain under the sternum was urgent, or pneumonia or pleurisy was apprehended, or where gastro-enteritic irritation was well marked. The ordinary internal medicine was antimonial mixture (gr. $\frac{1}{2}$ to \mathfrak{z} iss.) with 2 or 3 drops of laudanum 4tis horis, which was generally found to answer well; but in several cases, probably 20, half a grain or a grain was prescribed with benefit. Purges were often called for by constipation at the commencement, and were at all times used without hesitation, according to circumstances. As soon as fever abated, animal food, beginning with broth, if not previously in use, was employed, with porter, wine, or other cordial, according to circumstances. In 15 or 20 cases saburra and oppression were treated at first with emetic doses of antimony; and frequently the ordinary antimonial mixture operating on an irritable stomach, caused vomiting, which was found to be of service ultimately, however inconvenient in some cases at the moment. I do not know that bleeding was ever employed in uncomplicated influenza, but pneumonia or other visceral inflammations originating in influenza were encountered as usual. Into the treatment of the complicated cases it is unnecessary for me to enter, partly on account of the tediousness of a detail of so many various plans, but principally because influenza, not the diseases with which it was incidentally associated, is the subject of this communication. Suffice it in a general way to say that such cases were treated variously of necessity, but always with a double regard to the graver as well as to the transient and minor disease. Pneumonia and pleurisy were the complications that most frequently compelled us to deviate from our general method, and those were encountered by bleeding, both general and local, especially the latter, blistering, antimonials, and when less tractable on account of disease of the heart, age, &c. by mercury likewise, with or without opium.

61. *Note on the Influenza.* By RODERICK MACLEOD.—I presume that the cases I

have seen, taken altogether, have been of more than the average degree of severity, first, because they have been treated partly in St. George's Hospital, where the slighter cases were not admitted; and secondly, because a certain proportion of the others have been patients, to whom I have been called by general practitioners, who have done me the favour to ask for my assistance. Now, setting aside the mere catarrhal affections of a few days' duration, the great mass of the others which I have seen has been made up of unequivocal examples of inflammation of the air tubes. This has principally been developed in the minuter branches, but not unfrequently has extended into the trachea, and sometimes even to the larynx. The inflammation, however, has not been limited to the parts just mentioned, but in a certain number of cases has affected other mucous membranes in addition to the simultaneous participation of the air passages. Thus, taking 40 of the more severe cases, I find that 3 had well-marked symptoms of laryngitis; 3 had pleurisy; 4 had otitis, which in three terminated in purulent discharge of several days' duration; 1 had inflammation of the conjunctiva in both eyes; 4 have had inflammation of the posterior fauces; 2 have had swelling and inflammation of the parotid and submaxillary glands on the subsidence of the pulmonary affection; and in 3 erysipelas has followed on the subsidence of the primary attack. As in all the above there was a pulmonary affection, the result is, that 25 had bronchitis of different degrees of severity, and 15, in addition to this, had simultaneous inflammation of some other and for the most part analogous texture; while 5 had other forms of inflammation as sequelæ of the original attack. Of the entire number here referred to, 5 have died, 3 of whom, however, I saw only at a very advanced period of the disease, and therefore cannot speak of its early stage; 1 was a case in which erysipelas supervened upon laryngitis, and scarcely, I think, to be called a fatal case of "influenza;" the other 4 were cases of bronchitis, attacking persons who had been previously subject to pulmonary affections, and in whom the disease ended in suffocating effusion into the air tubes.

The general symptoms were, at the onset, chilliness, (in one amounting to violent rigor), severe headache, great lassitude and depression, cough, with hurried respiration and feeling of distress, referred to the chest generally, with much pain, (as if the parts had been bruised,) extending along the diaphragmatic margin of the ribs, aggravated by coughing or deep inspiration. The cough was at first dry, but after a few days became loose, in favourable cases, and afterwards accompanied by free mucous expectoration. The crepito-mucous râle was for the most part pretty general in both lungs, and a graver ronchus in the larger tubes; while, in not a few cases, a kind of tremor or vibration was felt, by merely laying the hand flat upon the chest, over the situations of the larger bronchi. The pulse was in general considerably increased in frequency, but (unless in the cases in which pleurisy was combined) was soft and compressible. There was heat of skin, but this diminished as the disease advanced, even in those cases which were running an unfavourable course.

In some of the published opinions of this epidemic, it has been argued that it was not essentially of inflammatory nature, because the patients did not bear bleeding well; but this I apprehend to be very frequently the case in bronchitis, as it also is occasionally in other inflammations—such as various forms of erysipelas. The disease in the present instance, as in bronchitis generally, has been by far most severe on those advanced in life, and it is familiar to all, that in them inflammation of the passages very rarely assumes the plastic form which it presents in early life. The principal source of danger, if I may so express myself, consists not so much in the activity of the inflammation as in one of its effects—namely, the increased secretion into the minute bronchi, by which the air is prevented from coming into contact with the pulmonary vesicles, so that the arterialization of the blood is arrested. Many of the patients whom I have seen, had more or less of a leaden tint, and all the four who died were deeply tinged—one of them as blue as I ever saw in cholera.

Of the four fatal cases alluded to, I had only an opportunity of examining two. The disease in one had lasted ten days, in the other a fortnight; in both the appearances were the same—namely, dark vascular redness of the mucous membranes, extending from the larynx to the minutest ramifications of the bronchi

which could be traced. The smaller air tubes seemed to be literally soaked with fluid, while the larger were smeared over with viscid mucus, as adhesive as bird-lime. The lungs gorged with blood. In one, old adhesions of the pleuræ; but in neither any evidence of recent pleuritic inflammation.

The general treatment consisted in confining the patient to bed, exhibiting a draught containing ʒij. of liq. acet. ammoniæ, every four or six hours, acting gently on the bowels, and promoting expectoration by means of oxymel of squill and ipecacuanha. In the great majority of cases perspiration came on within the first two days, after which the symptoms gradually, though but slowly, abated.

If the disease assumed a more inflammatory character, that is, if there was more than the average degree of fever, with hard, dry cough, calomel, with James's powder, or tartarized antimony, was prescribed, which, in the more acute cases, was pushed to the extent of twelve grains of calomel, and two of tartar emetic, in twenty-four hours. In such cases blisters were also applied to the chest. If, on the other hand, the inflammatory symptoms were less marked, or had been subdued, the expectorants were strengthened by the addition of spirit. ætheris nitrici, and compound tincture of camphor. Where the debility was great, a draught, containing f. ʒij. spirit. ætheris sulphurici, with ℥vj. of dilute sulphuric acid, sweetened with some syrup, was of service, and was afterwards followed up by some bitter tonic, particularly cinchona, as soon as the pulmonary symptoms were subdued.

Where there was much oppression of the lungs early, and before effusion had taken place into the air-passages, leeches to the sternum, followed by blistering, were efficacious. When the larynx and trachea were implicated, too, leeches were applied; but, guided by former experience, I abstained from general blood-letting in all the cases, except those in which the pleura was implicated; but even here the venesection was not well borne, producing a greater degree of subsequent debility than we are accustomed to witness from similar depletions; and in one of those, where the patient required to be bled three times to twelve ounces, although the pleuritic symptoms were thus overcome, he was seized two days after with erysipelas of the scrotum, and thighs adjacent, which speedily produced partial sloughing, and required the exhibition of bark and wine.

So, too, with regard to the affection of the throat; this has rather shown a flabby and relaxed condition of the membrane than acute inflammation. It has usually been attended with great pain in the deglutition of the saliva, while a mouthful of food could be swallowed without the same difficulty. Most relief was afforded in such cases by stimulating and astringent gargles.

In the cases where otitis took place, although the bronchial inflammation had not subsided when the former came on, yet it was no more complained of, and had disappeared when the discharge from the ear was established. Nearly the same thing was observed with respect to the inflammation of the glands about the jaw—that is, by the time they were considerably swollen, the breathing was entirely relieved.—*London Med. Gaz.*, Feb. 18, 1837.

62. *Remarks on the Influenza of 1837.* The cases of the Epidemic may be divided into three classes, according to the aspect of the symptoms.

1. Those cases, chiefly occurring in young persons, having the features simply of mild catarrh.

2. Those assuming more the aspect of rheumatic fever, to which catarrhal symptoms are attached only in a trifling degree, occurring also chiefly in the young and middle aged.

3. That severe form, prevailing most amongst the old, and more especially those who have the chronic bronchial affection so common to elderly persons.

In the first form there is generally chilliness or rigors, succeeded by heat; pain, often severe, in the frontal sinuses and nostrils, with feeling of suffocation from swelling of the membrane lining the back part of nostrils—often with bleeding from that part. Troublesome cough, from irritation referred to the lower part of trachea; especially teasing during the night; not relieved in the usual way by expectoration. The pulse weak, not much quickened; tongue slightly furred, and generally moist.

Treatment.—By confinement to bed, or to a room of equal temperature, these

cases soon pass over. Recovery seems to be chiefly retarded by the depression so marked in this disease, together with the persisting *dry* cough.

Saline and mucilaginous medicines, as mucil. tragac., or acaciæ, mist. amygd., or oxymel, with small doses of antimony and nitrate of potass. The night cough much relieved by ten grains of pulv. ipecac. comp. at bed-time, in mucilage, with spt. æth. nitr. 3ss., or made into pills with mucilage; by which a quiet night's rest is procured with great relief. The bronchial irritation may be much mitigated by mustard poultices applied (from half an hour to two hours) to the upper part of chest. Secretion may be promoted by the following pill every four or six hours: *Rx.* Ext. Conii. Pil. Scillæ C. aa. gr. ii.; Pulv. Ipecac. gr. i.

Diet, arrow-root, gruel, whey, beef tea; with meat early in the convalescence.

In the second form the early symptoms are the same as in the first, but more severe: there is headache, much pain in the aponeuroses of loins, scapulæ, and limbs, often round the *margin* of chest, apparently in the tendinous structures external to the chest, sometimes extending over one side and suddenly shifting to the other; the pulse quick, and generally small and weak; the tongue furred, white and moist, often dry and yellow; trifling cough, and uneasiness in the air passages; the cerebral symptoms in some cases severe, often amounting to delirium. There is generally much depression; often syncope. The urine is small in quantity, and loaded with lithate of ammonia.

Treatment.—Saline aperients, with calomel and antimony at night. Leeches to the forehead in many cases, and to the chest, followed by blisters, when the pains about the chest are severe. Bleeding does not seem more effectual in giving relief than leeches, and is not well borne. Vinum colchici, in half-drachm doses, relieves the pains in the head and limbs; 10 grs. of Dover's powder, with nitre, at bed-time, is very useful in allaying pain and procuring rest. Where the tongue is much furred, great relief is obtained by purging the liver with calomel, followed by warm aperients, as rhubarb, magnesia, and dec. aloes, or rhubarb and tartrate of potass, or sulph. and carb. magnesiæ, with tr. card. co. As soon as the febrile symptoms have subsided, and the tongue gets clean, quinine is the best tonic. The diet should be as nourishing as the stomach and system will bear.

In both these forms the depression of strength and spirits is very remarkable—quite out of proportion to the other symptoms.

In the third form the chief danger is from the large quantity of tenacious mucus secreted by the bronchial surface; the depression of strength causing great difficulty in its expectoration. The attack frequently appears but as an aggravation of symptoms previously existing, but whose features it rapidly changes. The strength sinks; the appetite fails; the circulation becomes languid; the strength is inadequate to expel the large quantity of bronchial secretion; the lips get blue, the intestines cold, and the patient soon sinks,—often in a few hours. In less severe cases, there is a lighter shade of these symptoms; the tongue is much furred—often brown and dry.

Treatment.—Much benefit is derived from blistering the chest, which should be done early in the case, so as to *anticipate* the severe symptoms. Squills, ipecacuanha, antimony in small doses (avoiding its depressing effects); and where antimony cannot be borne, the lobelia inflata (tincture) appear serviceable in clearing the bronchial tubes, in doses of 3ss. every six hours, with æther and ipecac. Where the tongue is much furred (as it is almost always), one or two doses of calomel, followed by hyd. c. creta, combined with rhubarb, or at night with Dover's powder. This form of opium appears to agree better than any other in this disease; perspiration is promoted and rest is procured, without that binding effect on the secretion which follows the other preparations of opium. Nourishment must be cautiously given from the first; such as beef-tea, jelly, yolk of egg, with warm milk, or whey; and where there is much prostration, with wine, or brandy. There is in many cases very troublesome vomiting; this is relieved by potass, soda, or ammoniæ carb.; effervescing with lemon juice. Warm milk, with soda-water added to it, is a pleasant beverage in these cases.

Amongst the young, one fatal case only occurred, in a publican of intemperate habits, and unhealthy condition.—*London Med. Gaz.* February 18, 1837.

63. *Influenza.*—The following observations on the epidemic are extracted from an editorial article in the *Lancet* of 4th February last. "So far as enquiry has ena-

bled us to form a judgment, the disease is produced by some infectious poison, gaseous or miasmatic, suspended in the atmosphere, favoured, perhaps, in its transmission from place to place by moisture, and promoted in its reception by the respiratory apparatus, by the moisture in the air, and by the action of cold debilitating the parts to which the poison is applied. It may be said that as this infectious principle must be applied to the whole respiratory tract, it ought at once to produce general bronchitis in the individual, as well as coryza; but to this it may be answered, either that those parts which are attacked are alone so constituted as to be capable of receiving the infection, or that the poison becomes modified as it passes on; at all events the action of some such poison, whether thus received, and thence transmitted to the whole system, or received by the whole tract, and then re-acting on those points chiefly which are affected, seems to cause the production of the disease. Thus the infectious principle of measles acts only on particular parts of the system, though it is received into the system in a similar manner. With reference to the first condition it might be worth inquiring how far the increased action set up in mucous surfaces when exposed to any irritating matter, protects, as has been supposed, the constitution against its introduction. This much we certainly know, that in many cases where these symptoms of local irritation ceased, or were imperfectly developed, the constitutional irritation became much more severe.

"The approach of the disease, in what may be called its regular form, has generally been indicated by trifling cough, however little noticed, more or less uneasiness, sometimes amounting to pain in the bones, or, rather, what has been described as a sensation of bruising in the osseous system, lassitude, and slight chills. On the succeeding morning, after a restless night, severe headache, commonly referred to the situation of the frontal sinus, was complained of; frequently, however, especially in one variety, seated in the occiput. The pains in the bones had now also greatly increased; they were sometimes described as lancinating, sometimes as gnawing, and often stated to be intolerable. Sneezing, and a watery discharge from the nostrils, with running from the eyes, followed in the course of the day, accompanied by cough, which was now severe, peculiar, and spasmodic. Towards evening on this day there was commonly great prostration, at times excessive, extreme oppression and difficulty of breathing, and, invariably, rigors, often most severe; it appeared, in fact, as if slighter chills experienced on the day preceding had marked the reception of the disease, evinced by the catarrhal symptoms on the following day, the rigors indicating full constitutional affection. After continuing in this aggravated form for a day or two, seldom more, unless the patient would not confine himself to his room, or bed, the disease began gradually to decline. While at its height, in many cases, sore throat, in several deafness, and dimness of sight, generally of but one eye or ear; in some, pain over the maxillary sinus, were complained of. Soreness of the sides, and tip of the tongue, frequently, and, occasionally, apthæ were also noticed. In these cases the tongue was generally white, furred along the middle, or red, with the papillæ elevated; sometimes glazed and dry, and at other times dry, brown, and coated. There was often considerable thirst, more rarely nausea. The bowels, with very few exceptions, were more or less confined, and free from pain. The urine varied extremely, in quality and quantity, as before stated.

"The crisis was generally marked by a gentle perspiration, and, in those cases in which the urine had been scanty and high coloured, by a lateritious sediment and an increase of the quantity, all the other symptoms becoming ameliorated at the same time. Some additional complications with other states have been observed since our previous notice of the epidemic; one of these, indeed, namely, its occurrence in pregnant women, and production of miscarriage, we then omitted to mention. Of three cases where miscarriage has taken place, well-marked catarrhal symptoms had previously existed in two of them for three or four days, followed by pains in the loins, and rapid miscarriage; in fact, in both it occurred before medical assistance could be procured. In a third case, which was attributed also to a cold, miscarriage took place very early. In the fourth, notwithstanding the invasion of severe pains in the lumbar region, nausea, &c., early attention and treatment prevented a disastrous result. This case was followed by vesico-urinary catarrh, which, accompanied by scalding, was observed also in one of the first-mentioned cases. Two very severe cases, in which pneumonia supervened before medical aid was obtained, have occurred in the locality in the centre of

which we write. In one of these the side was completely dull, slight bronchial respiration and bronchophony only being audible during ordinary, and a very minute crepitus during forced, inspiration.

"We have little further to add respecting the treatment, except that in no case was bleeding found expedient. In fact, such is the *constitutio anni*, that in very few diseases does bleeding seem to be judicious, as a remedial means. Tartrate of antimony and potash have never once disappointed in the course of the epidemic, in any one of the forms it has assumed, whether complicated with erysipelas, arthritis, or bronchitis. Even in those cases where the pulse was very feeble, its employment was equally attended by advantageous results, and, far from creating depression, it acted partially as an excitant, by removing disease. The existence of bowel complaints, which were only present in three or four cases, alone contraindicates its use. In the suffocative catarrh of children, after the ineffectual trial, in one case, of the protochloride of mercury and ipecacuanha, given at first with aperients, and subsequently, when the expectoration had become profuse, and the powers of life had begun to fail, ammonia and blisters being employed with but temporary benefit, the cautious administration of tartrate of antimony was followed by complete success. In the pneumonic cases, the administration of the protochloride of mercury, in small and repeated doses, to the extent of 6, 8, and 10 grains a-day, with dry cupping over and below the scapula, was successfully employed. For the dysentery, turpentine fomentations, and the proto-chloride of mercury and muriate of morphia, have been equally useful. In the colic, aperients; in the spasmodic vomiting, draughts, composed of aromatic spirit of ammonia, rhubarb, magnesia, and liq. opii sedativ., with mustard cataplasm, removed the symptoms. Full doses of castor oil were, in some cases, serviceable aperients.

"In the pneumonic cases, hydriodate of potash appeared to complete the cure which the mercury had nearly accomplished; the hydriodate removing the soreness of the mouth, and diminishing the subsequent debility. At the commencement, and at the decline, of the attack, occasional hot baths were useful. It is proper to add, that in some cases, in which we understand bleeding had been employed, the results were far from being favourable. This was particularly the case, when, misled by the urgency of the symptoms, it had been employed at the onset of the attack. Valuable assistance was derived from the use of the wine of the seeds of colchicum in the arthritic varieties, and from the sulphate of quinine in the intermittent, and in those cases of bronchitis which were attended with profuse expectoration and feeble pulse. In many cases dry cupping, directed to roomy parts, was found most decidedly beneficial; and so influential in its operation as sometimes almost to produce syncope, the pulse falling, the livid lips becoming pale, and subsequently gaining some degree of redness. Blisters, in the latter stages of the attack, were also serviceable."

CHEMISTRY AND PHARMACY.

64. *Discovery of Sulphate of Quinine in the urine.*—PIORRY has remarked, that in 20 or 25 minutes after a person has taken sulphate of quinine, the urine tastes strongly bitter. He gave a quantity of urine of this kind to Vallée to analyze, who obtained from it sulphate of quinine in crystals (*Behrend's Repert.*) Landerer, apothecary at Athens, obtained a similar result from the urine of a patient affected with intermittent fever, who had taken, in some paroxysms, 40 grains and even a drachm of muriate of quinine (*Buchner's Repert.* 14, 1836.)—*British Annals of Medicine*, February 3, 1837.

65. *Crystals from the volatile tincture of Guaiacum.*—LANDERER observed, in a specimen preserved for 33 years, at the bottom of the vessel, a quantity of prismatic green crystals possessing an alkaline reaction, and, when mixed with lime, disengaging ammonia. The supernatant tincture contained but little ammonia. The crystals were therefore composed of the resin of guaiacum and ammonia.—*Ibid.* from *Buchner's Repert.* vol. vi. p. 83.

66. *Method of preparing Aconitine.*—In another part of this Journal, (p. 223) we have noticed the success attendant upon the use of the aconitine in Neuralgia. Having been prevented experimenting with it ourselves, by the impossibility of procuring the article in our shops, we publish the following method of preparing

it from Turnbull's work on the medical properties of the Ranunculaceæ, in hopes that some of our apothecaries may be induced to furnish a supply of the preparation.

1. Let a quantity of the fresh root of the *Aconitum napellus* be cautiously dried, and reduced to powder, taking care not to inhale any of the fine dust. Digest one part of the powder by weight in two measures of strong alcohol, at a gentle heat for seven days, filter while hot, and reduce the fluid by slow evaporation to the consistence of an extract. The temperature by which this is effected must not be greater than barely sufficient to carry off the alcohol, otherwise the active principle will be destroyed or expelled. Liquid ammonia is then to be added to the extract, drop by drop, till, when stirred, it give out the odour of ammonia. If too much ammonia be added, the product will be decomposed. The mass now consists of impure aconitine, mixed with extractive and other matters soluble in water. The aconitine may be taken up with boiling alcohol or sulphuric ether, or the soluble matter may be removed by repeated washings with small quantities of cold water. If the latter plan be adopted, a quantity of light brown or gray powder will be left, which is to be purified by subsequent solution in alcohol. Aconitine is very powerful. Twenty drops of an alcoholic solution, in the proportion of one grain to a drachm of alcohol, being put into the mouth of a guinea pig, occasioned death in a few minutes.

2. Aconitine may be prepared in another way which yields it purer. Dissolve the alcoholic extract prepared as above, without adding ammonia, in as much cold water as will take it up, decant the solution from the insoluble part and filter it. To the filtered solution, add liquid ammonia drop by drop, as long as it occasions a precipitate. When the precipitate has subsided, draw off the supernatant liquid by a syphon. Dry the precipitate without heat, and either purify it by repeated washings with cold water, or, what is better, dissolve it in as much alcohol as will take it up, and throw the solution into cold water. A precipitate will be formed of a white colour, which is aconitine in its purest form. The product must be carefully dried.

MEDICAL STATISTICS.

67. *Statistics of Calculus in Austria.*—The following tabular views are extracted from VON WATTMAN'S recent Treatise on Lithotrity and Lithotomy, (*Ueber die Steinerbohrung und ihr Verhältniss zum Blasenschnitte.* Wien, 1835. 8vo.) and are founded on official documents supplied by Professor Raimann, of Vienna.

I. *Calculous Cases in the Austrian Dominions, from 1820 to 1830.*

Provinces.	Whole Population.	No. of Cal. Cases.
Vienna and Lower Austria, including the military,	1,206,520	“ 49
On the Ems and Salzburg	835,043	“ 18
Galitzia	4,316,086	“ 19
Moravia	2,046,787	“ 39
Bohemia	3,582,150	“ 106
The Tyrol	780,399	“ 11
Styria	854,720	“ 10
Illyria and Maritime States	1,154,885	“ 31
Venice and the Eight Provinces	2,032,339	“ 278
Milan and Lombardy	2,400,000	“ 794
Dalmatia	383,600	“ 49
Total	19,592,529	1,449

Proportion, one case in 13,531 of the population.

II. *Cases of Lithotomy in the Surgical Clinic of Vienna, during thirty-five years.*

Age of the Patients.	No. operated on.	Deaths.
From 1 year to 10	71	7
— 11 — 20	42	3
— 21 — 30	30	9
— 31 — 40	12	3
— 41 — 50	6	3
— 51 — 60	11	6
— 61 — 68	8	3
Total	180	34

All the patients admitted, except four, were operated on. The above table gives the following results:

Proportion of deaths to the whole operations,	1 in $5\frac{1}{4}$
in children	1 $11\frac{3}{10}$
between the ages of 20 and 30,	1 $3\frac{8}{11}$
— 50 and 60,	1 $2\frac{1}{11}$

Of the thirty-four deaths, the following are given as the causes:—Gangrene of the bladder, 6; Phthisis, or hectic fever, 5; Debility, 6; Exhaustion from Suppuration, 3; Nervous shock, 3; Typhus, 6; Convulsions, 1; Suppuration of the Kidneys, 1; Cholera, 1.

III. General Chemical Constitution of the Calculi in the Vienna Collections.

Nature of the Calculus.	In the Patholog. Museum.	In the Univers. Museum.	In the Joseph Museum.	In V. Kern's Collection	In Watmann's Collection.	Total.
Phosphatic	32	26	27	28	26	139
Oxalic acid, with phosphatic envelope	3	16	5	8	8	40
Oxalate of lime . . .	4	12	3	1	7	27
Oxalic acid, with uric acid envelope . . .	9	3	—	3	5	20
Uric acid	11	9	10	10	11	51
Number of patients and calculi . . .	59	66	45	50	57	277

Brit. & For. Med. Review, January, 1837, from *Schmidt's Jahrbücher der Gesamten Medicin*, B. x. H. 3, No. 5, 1836.

68. *Medico-Statistical Report of the Deaf and Dumb in the Dutchy of Brunswick, in the year 1835.* By Dr. MANSFIELD.—(1.) The whole population of the dutchy, 253,232; the total number of deaf and dumb, 125; consequently the proportion is 1 in 2,026. (2.) Of the 125, 60 are males, and 65 females. (3.) In Prussia, the proportion of deaf and dumb to the population is 1 in 1,426. (4.) Nearly the fourth part of the whole number had one or two brothers or sisters similarly affected. (5.) For the most part, these persons belong to the middle and lower classes; their parents being generally poor. (6.) The health of these persons is in general good; those residing in the vicinity of the Harz are said to be scrofulous, and five of the whole number are idiotic. In two cases only could the deaf-dumbness be traced to distinct causes; viz. one as the consequence of fright, the other of miliary fever. (7.) Almost all the deaf-dumb in the dutchy have the benefit of education; a circumstance very creditable to the country, and which the author with a just pride, contrasts with the great neglect of the same class of persons in Austria, in which vast empire it appears that, out of 20,639 individuals labouring under this infirmity, only 400 are placed in houses of instruction, (ten in number;) all the rest being left without assistance. When it is considered that, of this number, the fifth part at least are susceptible of instruction, there is evidently here a great neglect of the duties of humanity. (8.) With the exception of those who are yet too young to work, or who are mentally incapable of gaining their livelihood, or are supported by relatives, (57 in all,) or who are in the course of instruction, (number not mentioned,) all the others are gaining their own livelihood as artisans and labourers. (9.) Dr. Mansfield calls the particular attention of teachers to the fact, that, in many cases, the inability to acquire the sound of particular letters or words depends on physical defects of the organs of speech, and not on mental incapacity. In proof of this he instances nine cases among the children at this time in the Brunswick Institution, who labour under some defect of this kind. The defects mentioned are the following:—Imperfect uvula; thick tongue, without frænum; large tongue, long and irregular uvula; tongue deficient in muscularity; tubular palate, imperfect uvula; enlarged tonsils; flat and irregular palate; general defective size of mouth, large tonsils;

imperfectly developed larynx.—*Ibid* from *Hannoversche Annalen*, B. i. H. 4. October, 1836.

MISCELLANEOUS.

69. *Morrison's Pills*.—The convictions of manslaughter of some of the vendors of Morrison's Pills, seem to have had a salutary effect in lessening the sale of this deleterious medicine. From the evidence of John King, a clerk in the medical department of the English stamp office, given in a recent trial, it appears that the duty paid by Morrison for stamps, which in 1835 was 9,381*l.* was in 1836 only 4,275*l.* The trial alluded to, took place in the Court of Common Pleas, February 11, Middlesex settings, before chief justice Tindal and a special Jury. It was brought by Morrison & Bell against the proprietors of the *Weekly Dispatch* newspaper, for a libel published in that paper, imputing to the plaintiffs that they were ignorant quacks, whose system was one of wholesale poisoning; and also that the principal partner in the concern had absconded from the country, in consequence of the insolvency of the establishment. The damages were laid at 1000*l.*

The jury returned a verdict for the *defendants on the first issue*, namely, that which related to the dangerous character of the medicine, but added, they thought the pills might be taken if administered with proper care and discretion. On the second issue, that relating to the solvency of the plaintiffs, they found for the plaintiffs—damages 200*l.*

The following is the result of the analysis of Morrison's Pills, No. 1 and 2, by Mr. Daniel, Professor of Chemistry at King's College:—12 pills No. 1 contained 11 1-10 grains of resin of aloes, 10 4-10 grains of cream of tartar, 4 4-10 grains of gum and other insoluble matter; 12 pills No. 2 contained 5 1-10 grains of resin of aloes, 4 1-10 grains of gamboge, 2 grains of pounded colocynth, 6 7-10 grains of cream of tartar, 4 7-10 grains of gum and insoluble matter.

The report of the trial is given in the *British Annals of Medicine* for February, 17, 1837.

70. *Respirator*.—Mr. JULIUS JEFFREY has invented an instrument, to which he has given this name, and the design of which is to ensure the wearer a supply of atmospheric air, of a certain temperature, under all vicissitudes, and to obviate the danger of sudden changes of either.

The Respirator consists of a packet of lattices, or small frames of silver, kept apart by other similar lattices, of a water-proof substance. These last lattices serve as imperfect conductors of heat, for keeping the silver lattices apart. The silver lattices are overlaid with gold wires on both sides. The wires on those nearest the mouth are one three-hundredth of an inch thick, and one three-hundredth of an inch apart. On the outer lattices they are about one six-hundredth of an inch thick, and one six-hundredth of an inch apart. The packet is made up of from four to ten of these lattices, carrying from eight to twenty layers of wire, with a non-conducting lattice between each skein. The packet is arched, to suit the curvature of the mouth. It is lodged in a case, which it exactly fits everywhere but behind, next the mouth. Here there is a small space behind the packet, to permit the breath to diffuse itself to every part of the back, or concave surface, of the packet, after it has passed from the mouth. The case is so formed as to collect whatever moisture is condensed from the breath, and to deposit it on a strip of sponge, fixed in the lower part of the case. It is only necessary to open the case, and remove the packet of skeins once a day, in order that the interior of the case and the sponge may be removed, and rinsed in warm water. There is another kind of instrument, which has a communication with the nostrils, as well as the mouth, to suit the convenience of persons who have not acquired the habit of breathing chiefly through the mouth.

[The utility of some such means of protecting the lungs from the action of cold is undoubted. We have long been in the habit of recommending to our patients who have delicate lungs the use, in cold weather, of a silk net placed around the neck and drawn over the mouth and nose, and have found it answer the designed object. It is cheaper and much more readily obtained than the instrument above described.—ED.]

AMERICAN INTELLIGENCE.

Sketches of the state of the medical profession in Palestine, with notices of the principal medicinal plants and diseases of that country. By G. R. B. HORNER, M. D., Surgeon U. S. N. (Extracted from a letter to the Editor.)—In compliance with the promise made in my last letter, I now send you some professional information respecting Palestine and Egypt. My observations have not been as extensive or as minute as desirable, from their having been connected with the performance of my duties aboard; and not having it in my power to control my own movements, nor to devote as much time to the acquisition of information ashore as I wished. I flatter myself, however, these observations may be found worthy of perusal by yourself and the readers of your Journal.

The state of our profession in Palestine is so bad, so poor and degraded, as to furnish little matter worthy of remark. The physicians of that country are principally Arabs, who are entirely uneducated; and whose acquirements and skill are in such poor repute even among their own countrymen, that they obtain little respect, and they are employed by few, save the poorest and lowest class, when the services of any Frank physician can be procured. At Sidon, now Seyd, the place which we first visited, and which has a population of 8000, exclusive of a garrison of 4000 Egyptian soldiers, there is no surgeon or physician deserving the name, save one, a Frenchman, belonging to a battalion.

At Baireut, a town about the same size as Sidon, with a much more populous and fertile country, the only regular physicians are Dr. Michale Rinaldi, a Neapolitan, and Dr. Gregorio Partili, a Greek, and native of Salonica, who was educated by a French physician of that town, and has practised some years at Damascus. Through the American consul, M. Chaussaeud, I became acquainted with the latter. With the former I did not meet until we went to Tripoli. To these three gentlemen I am indebted for much of my information concerning the diseases of the country, and the remedies employed by the Arab and European physicians. Besides Drs. Rinaldi and Partili, there are at Baireut a number of Arab physicians, or, I should rather say, empirics, who have in use some of our chief medicines, which they mostly obtain from Europe; such as jalap, calomel, and tartar emetic, and which they give in heroic doses. Dr. Partili told me that their common dose of jalap is from one to two drachms, and that of tartar emetic four grains. Calomel they prescribe in corresponding doses, but with regard to the dose of castor oil they are not particular, and never make it less than three ounces. While at Baireut I was frequently consulted by Franks and natives for their complaints, not only ashore, but aboard. The most interesting cases were one of partial idiotcy and hemiplegia with marasmus, brought on by onanism, and another that of an Arab, a citizen of Aleppo. The history of this last was the following: two years before, being unwell, he consulted an Arab doctor at Aleppo, who having examined him, said he had ulcers situated upon the privates, but which were visible only to himself, for the patient was unable to see them. The doctor prescribed four grains of calomel a day, and continued the treatment for two years. The consequence was, what may be easily surmised, incessant and incurable pain in his bones. Observing, while he was talking with me, that his face writhed from pain, and at the same time he put his hands to one of his legs, I examined it, and found on the skin a large node. Being young, handsome, and very genteel, and evidently a great

sufferer, my sympathy was excited to the highest degree, and I gave him whatever advice was thought best for the cure of his complaint.

Such is the want of proper medical treatment in the adjacent country, the American missionaries informed me, that in going through it, it was common for the inhabitants to run forth, stop their horses, hold out their hands for the pulse to be felt, and beg them to prescribe. All Franks, by the people of this country, are believed to possess more or less knowledge of medicine. They, therefore, do not consult physicians alone for the relief of their disorders.

Three months before our arrival at Baireut, the plague had occurred there. M. Chaussaeud states that it originated from a letter from Alexandria, Egypt. The person who received the letter, opened it without purification, and was quickly seized by the disease; but not confining himself, though buboes had formed under his arms, continued to visit his friends; they took the disease from him, and seventeen of them died. Such indignation was excited towards the receiver of the letter, who was a quarantine officer, that he would have been shot had not the disease itself cost him his life. An English apothecary settled at Baireut several years ago, and having done a large and profitable business, is now displaying his wealth, by the erection of a fine house after the European style, the only one to be seen there.

At Tripoli, which is a town containing 15,000 inhabitants, and situated in a rich and delightful country, between the most lofty part of Lebanon and the sea, there is not a single Frank or regularly educated physician, or an apothecary. All the professors of our art there, are Arabs, such as have been mentioned. If any one of our brethren at home is desirous of becoming a practitioner in the Holy Land, he could not chose a more promising situation than Tripoli, for he will have no competitors, and there is much sickness.

In Jaffa, there is only one Frank physician. He is a Neapolitan, and lately settled there; but has been a long time in the country. He is advanced in life; is a sensible, pleasant man; appears to have been well educated, and having been appointed physician of the quarantine, left Baireut and went to Jaffa. I do not know that I can more properly remark any where else than here, that quarantines have been recently established throughout the sea-port towns belonging to the Pacha of Egypt. We obtained pratique at Suda, in Candia, two days after our arrival, and were not quarantined again at any of them.

At Jaffa, being anxious to obtain some Arab medicines, I went to the shop of one of the chief apothecaries, and through the kindness of Frederico Jacomo, a Spanish friar, belonging to the Franciscan convent, Terra Santa, who spoke Arabic, and had studied medicine, purchased whatever I wanted, and learned all the properties and uses of the different articles examined. This shop was not like those of Philadelphia, decorated with marble, and having windows displaying rows of glass vases and globes, filled with gaudy coloured liquids. It was in a bazaar, and like other shops, it was open in front from the ceiling to the floor; and, not needing them, had neither doors nor windows. For closing it, were two shutters, suspended by hinges, one above, the other below. The lower formed a counter projecting into the street, and covered by open boxes of drugs and medicines. The height of the shop was about ten feet, its depth eight, and its width fifteen feet. All the medicines, save those on the counter, were on shelves, and put up in small oval wooden boxes, on the front of which were written the names of the medicines in Arabic characters. The apothecary, a large, well-dressed, fine looking old man, clothed in Turkish costume, sat cross-legged at one end of the counter, received the articles I purchased from an assistant at the other end—held the scales, weighed the medicines, and set down the prices. The following are some of the medicines I bought: Gum Arabic brought from Babylon. It is in small, hard, friable masses; is transparent; has a beautiful amber colour; little or no taste, or smell, and when broken

is as brilliant as glass. Haiarx amber, or Cassia fistula, from Abyssinia. It does not differ in appearance from that brought from the East Indies, being a black pod, about eighteen inches long, three-quarters of an inch in diameter, and containing a black, sweet, well-flavoured pulp, and many large, yellowish, hard seed. It is an ordinary purgative among the Arabs.

Lasan asfur, called lengud de paxaro, or bird's tongue, by the friar from its appearance. This is an elliptical flat seed, half an inch long, of a yellowish white colour exteriorly, and of a white colour interiorly. It is crisp, is covered by a thin cuticle formed into longitudinal folds, is slightly mucilaginous, and burns the mouth when chewed. It is given in pulmonic and rheumatic affections. Arakduhab. This is brought from Persia, is cylindrical, shaped like an ear of Indian corn, an inch and a half in length, of a dark grey colour, has an exceedingly fiery taste, an aromatic odour, and is covered by many small diamond shaped seed, set around it in a spiral manner. The apothecary said it was combined with sugar, and given for the cure of diseased eyes, ophthalmia, &c. It might be useful in amaurosis, but I think where the eyes are inflamed would do much more injury than benefit. Aoutesabel. This is a product of Arabia and is used for the prevention of plague. It is a bulbous root, five inches long, an inch in diameter, and tapers towards both ends, at one of which are several ligneous stems supported by a short trunk. This root is of a light brown colour without, and of a dull white within. It has a slightly bitter astringent taste, and an earthy unpleasant odour. Aoutkara. This is a fusiform root, with a blackish-grey wrinkled skin, it varies from three to four inches in length, and from a third to two-thirds of an inch in diameter. Its substance is white, its odour fœtid, and its taste bitterish, pungent and nauseous; chewed it is somewhat mucilaginous. This medicine is given by the Arabs for the cure of pulmonic affections. Tinfil. Small seed, about twice the size of mustard seed, having several facettes caused by pressure against one another, and remains of their peduncles. They are of a reddish-brown colour, have an aromatic odour, a hot, fiery taste, and when broken are found to consist of a very thin shell containing a white farina. They come from Persia and are said to cure nervous complaints and rheumatism. For the cure of the latter they are put into hot baths. These seeds are so fiery, that it is probable the Thompsonians would prize them very highly and rank them even with No. 6.

Having described the chief medicines bought of this Arab, I will conclude the subject of the physicians of the country. At Jerusalem, which contains 30,000 inhabitants, our profession is in as degraded a condition as in any other part of Palestine. The only physician there deserving the title, is a surgeon of Ibrahim Pacha's army, and cannot be considered as a resident. He is one of four French surgeons the Pacha has lately employed. All the physicians at Jerusalem, save him, are Arabs, and of the same kind as those already mentioned. This is to be much regretted, for many are the lives of pilgrims and travellers lost there by the want of proper medical attendance. Among the latter who have lately died there is Mr. Carnagan, a young Irishman of fine abilities, of a highly cultivated mind and great zeal, who, determining to explore the Dead sea, built a boat at Jerusalem, transported it to the former place on a camel, embarked with one attendant, an Arab, and accomplished his purpose; having made all the wished for observations. Most unfortunately the fresh water taken along was lost overboard by the stupidity of the Arab, and they both suffered so much from thirst, heat, and fatigue, that they got ashore and reached Jericho with much difficulty. Both were seized with fever; the Arab died at Jericho, Mr. Carnagan was conveyed to Jerusalem, but was so ill, and died so soon, that he was unable to communicate the result of his researches. In his death science has much to deplore. Had he lived, the scientific world might have had their curiosity respecting the Dead sea fully gratified.

The chief medicinal plants I saw, were several species of *mentha*, the *ricinis communis*, *scilla marilema*, *melia argadarach*, the *datura stramonium*, olive tree, *cucumis agrestis* and *granatum*. Near Tripoli I found growing abundantly the *ricinis communis*, *melia azedarach*, *datura stramonium*, and *cucumis agrestis*. At the foot of the castle overlooking the town, I met with a most extraordinary specimen of the *ricinis*, it being in fact entitled to the name of tree. It was evidently many years old, and proved satisfactorily that this plant is there one of perennial growth. Its leaves and fruit, however, did not correspond in size with the huge trunk, and were smaller than those found on the ordinary plant along the roads and in the gardens. The *stramonium* grows to great perfection. I saw some of it growing to the height of 5 or 6 feet, and have one of the fruit nearly as large again as any I have seen at home. It is found growing in sandy ditches on the road side. The fruit of the *granatum* was larger here than in any other part. In the town I bought one and carried it on board as a curiosity: its weight was 1lb. 10oz. avoirdupois. The most luxuriant growth of the *cucumis agrestis* was upon the summit of the Mount of Olives at Jerusalem, at the back of the church of Ascension. This plant grows in dense bunches, several yards around. Its fruit grows between the stem, and leaves upon an upright peduncle with a crook at the top, and hangs presenting its apex downwards, its fundus upwards. When mature, the least touch will make it fly off the peduncle and discharge all its contents, both juice and seeds, through the hole in which it was fixed. Its contents are thrown several feet obliquely upwards and high enough to strike a person's face; mine has been repeatedly struck. The cause of its flying off and squirting is the great elasticity of the parietes of the fruit, which allow at first of distension, but at length react. If a wound is made in any part, the discharge will take place there.

Of the diseases of Palestine the most prevalent are fevers, dysentery, small-pox, pulmonary affections, plague and ophthalmia. Leprosy is said to exist, and especially at Jaffa, among the poorest class, but I saw no cases of it. The most common fevers are the intermittent and continued, which last resembles the bilious remittent fever of the southern parts of the United States, being violent and fatal, particularly to strangers. At Jerusalem typhus fever is said to prevail, but it is probably nothing more than the continued illy treated. Dr. Dodge, one of the American missionaries died of it there about two years ago. Fevers are most prevalent at Tripoli, a circumstance easily accounted for, by the fact of a large stream of water running from the foot of Lebanon into the town, being dammed up almost in the midst of it, divided into numerous branches and distributed throughout the level country by ditches, for the purpose of irrigating the gardens. Here the people are not found living in cottages as at Baireut, but reside altogether in town. By far, however, the most common complaint in the Holy Land is ophthalmia; and I can never think without pain of the misery it causes to the inhabitants. Wherever I went, blindness, nebula, leucoma were before me; but far oftener at the south than at the north. At Ramla, the Aramathea of the Bible, among the first objects I beheld were three blind men talking to one another; and in riding from the house where we put up, out of the town, I counted thirty-four persons blind in one or both eyes. That one half of its population have imperfect eyes is not an extravagant calculation. The numerous instances of ophthalmia and blindness there, may be attributed to the adjacent sand wastes, the exposure of the eyes to an ardent sun, the males either wearing caps without brims, or turbans, want of medical aid, and the blowing of the sirocca. Going over the Carmel mountains we encountered this wind. So dry, hot, and full of impalpable sand was it, that though we travelled by night, many of us had our eyes inflamed by sunrise the next morning, the time at which we reached Jerusalem.

Of Egypt I have not much to say, having had my observations confined to Alexandria, from the squadron getting short of provisions and being obliged to

leave so soon as to prevent us from penetrating into the country. Alexandria being the capital, the grand naval depot, and having great commerce, has of late rapidly increased in size, and is said at this time, including soldiers and seamen, to contain a population of 100,000; of which number 5000 are Franks. Being a place of such importance, it has attracted by hopes of making fortunes, many European physicians who are in possession of all the profitable practice among both the natives and their own countrymen. Some of them are employed in the navy, others in the army of Mohamit Ali. Two have been made Beys, of whom the most distinguished, I understood, was Clot Bey, who now resides at Grand Cairo. His cures have procured him his title, and are thought wonderful. The Pacha thinks so well of European doctors, that it is said that he will employ any one who will shew a diploma. The physician of the most eminence at Alexandria is Dr. Laidlow, an Englishman, who has been living there these five years. He is most celebrated on account of his cures of plague, and has charge of a hospital established within a few years for the benefit of all indigent Franks. I formed his acquaintance, and found him a most agreeable, sensible gentleman, and as far as I can judge, an accomplished physician. He believes in the contagiousness of plague, but says it is not as contagious as is believed; that he had known forty persons to visit a patient having it without catching the disease; that he visited patients having it as he did others; felt their pulses, opened the buboes to let out the matter; had cured his servant whom he attended the whole time in his own house, and nevertheless had never had the plague. He said the average number of cases he cured was 75 per cent., but when applied to in time a still larger proportion: that lately he had had nineteen English sailors affected with it under his care and had cured all, save four of them, who were brought when in a desperate condition from the ship to the hospital. Much, however, of the success of his treatment depends on the constitution; those of a nervous temperament soon have the brain inflamed and die, while those of a phlegmatic one will recover. During last year 17,000 of the citizens of Alexandria were destroyed by it, and among them many Europeans. It is most fatal in March and April, but prevails also during the summer, and is thought always to be in existence. The great fatality of plague there he thinks owing to bad treatment, closing the house, crowding about the sick and stuffing them with food, meats, fruits, &c. for they believe if a person is sick and does not eat, he must certainly die. The great havoc committed by this fell disease has caused the formation of a medical police and the appointment of health officers, who are all Franks. As soon as a case of plague is known to exist in any house, the doors are shut, the inmates quarantined and forbid all intercourse with their neighbours or other persons; and if any of them die the body is taken out and buried in quick lime. To this last regulation the people have a strong dislike, for they entertain a great abhorrence of being thus buried, from its being thought to fulfil the worst of all curses on an Egyptian, "may your body be burnt." To conceal the deaths of their relations, some have been known to bury them beneath their houses, and others to horribly mutilate the dead bodies and throw them into the streets, that they may be thought to have died by violence, not of plague, and might not be recognised. Alexandria is not alone infested with plague, but has another pest almost as bad, the small pox, which is so constantly prevalent, that it is always a dangerous post for men-of-war to visit. The crew of this ship was infected. One of the marines on guard, and stationed on a gang-board, seeing a boat approach in which were several Egyptians having on their faces marks of recent small pox, and looking as if they just got out ordered them to keep off. They persisted in attempting to get on board, and at one time got near enough to the sentinel for him to have jumped down into the boat, but were finally driven away by him. Nine or ten days after he was seized with varioloid, remained two weeks on the sick list and returned to duty a week ago; and this

morning I am sorry to say, a seaman is taken with this disease. He will be immediately sent to the Lazaretto here and kept from all communication with the crew until perfectly well. Adopting these means we hope to have no more cases; but should others occur they will be likewise sent to the Lazaretto. The whole crew, amounting to nearly 500 men, save a few, were vaccinated two or three days after the ship left the United States. While at Alexandria the ship took in a supply of Nile water which is sold there, and since it was served out has had her crew affected with diarrhœa and dysentery. No deaths have occurred from either complaint.

We are now in quarantine, have been for eight days, and expect to be for some time to come.

Port Mahon, U. S. Frigate United States, Nov. 4th, 1836.

Case of Encysted Dropsy. By ISAAC G. PORTER, M. D., of New London. The following example of this disease occurred in a male child, who died at the age of three years and four months. The individual was in all respects healthy, until he was thirteen months old. He then had (Oct. 1834) dysentery, from which he apparently recovered. In January following, he was feverish, the bowels being costive and tumid. As the child was teething the symptoms were ascribed to the irritation consequent on that process, and he was treated accordingly. The health and spirits were soon regained, although the abdomen continued to increase in size, giving at times obscure fluctuation, but usually being tense and hard. By some medical men it was supposed to be an ordinary case of ascites, by others, an enlargement of the mesenteric glands, and by others, still, from the size, and tortuous form of the abdominal veins, fungoid disease of some of the viscera. The case was watched with much interest, from month to month, and for some weeks prior to death fluctuation became strikingly apparent. The child, in the mean time evinced very few signs of disease, had a good appetite, regular functions of the bowels, and amused himself in going about the house. Still his respiration was short, and he was easily fatigued, as well as much incommoded by the immense bulk of his abdomen. He passed large quantities of limpid urine, of a light colour, and for two months previous to his death was feeble and drooping. Four days prior to that event he had cough and vomiting, and sank under the ordinary symptoms of bronchitis.

Autopsy.—The external aspect of the limbs, round and full, exhibiting little emaciation. The same true of the face, one cheek having the florid hue of health. The abdomen enormously distended; the ribs so much pressed out by the accumulation within, that on surveying the trunk from above it appears globular, the diameter from the top of the sternum being scarcely greater than from side to side. The circumference of the abdomen was found to be 2 feet 11 inches; the whole length of the child 2 feet 7 inches.

On plunging the scalpel into the abdomen, a large quantity of light-yellow, transparent serum escaped. Continuing the incision, the parietes of an immense sac were exposed, which filled, entirely, the right portion of the abdominal cavity. The liver, stomach, and spleen, were situated in the left hypochondrium, the former stretching a little into the epigastric region. The intestines and omentum, which were much glued together, were pressed into the left iliac region. All the viscera, especially the liver and lungs, were remarkably small, being much diminished by interstitial absorption. The cordiform tendon of the diaphragm was so much elevated by pressure as to be nearly on a line with the top of the sternum.

The sac, which has been alluded to, was of a white, fibrous texture, and was from one to two lines in thickness. The external surface was adherent to a large portion of the diaphragm, and the serous membrane lining the abdominal cavity. On its inner surface were portions of semi-calcareous matter,

white, and of an aborescent appearance, and quite hard and brittle. They were scattered in various parts, were rather smaller than a crow quill, and three or four inches in length. Within this large sac were others; two, which appeared to arise from it, being thick and fibrous in their texture, the size of grape shot, and containing serum; the others, two in number, being larger, and each containing a pint of serum. Of the latter the coats were exceedingly thin, and resembled concrete albumen. Were they not true hydatids? From all these cysts collectively were drawn ten quarts of serum, by measure.

The foregoing case has points of interest, among which may be noticed:

1st. The little disturbance of the general health, manifested in this, as in most cases of encysted disease, which continued until a short period prior to death.

2nd. The transposition of the liver, stomach, &c. The child being originally well-formed externally, it has been concluded that the disease must have originated beneath, and to the right of the liver, and that pressure alone caused its removal.

3d. The existence of so large a cyst in a child. Inflammation probably existing in the serous membrane of the abdomen, there was an exudation of organizable matter, fibrinous or fibro-albuminous in its nature, together with some effusion of serum. The former surrounding the latter, gradually became more developed and organized, increasing in thickness, and forming a true cyst. These adventitious productions have been shown by Bichat to be analogous in their structure and functions to the serous membranes. Chronic inflammation existing in this species of sac, there was a continued effusion of serum from its parietes, which ultimately resulted in death.

New London, March 17, 1837.

Case of Imperforate Hymen. By CHARLES BALDWIN, M. D., of Union, Monroe county, Va.—In the summer of 1836, I was called in great haste to visit Miss J. K. in consultation with my young friend Dr. Ward Cook. From her friends I received the following history of the case. That she was then in her sixteenth year of age, and had never menstruated. That she had every appearance about twelve months previous of having arrived at the period of puberty. That about that time nature had evidently commenced her efforts to establish the menstrual flux: that regularly once a month there was slight indisposition which continued five or six days: that for the last three or four months these attacks had increased in violence, being attended with bearing down pain, and pain in the hips and loins. Yet there was not the slightest appearance of menstrual discharge. During the intervals her health was perfectly good. All the common remedies usually resorted to in such cases, proving of no avail, Dr. Cook was called on. He, believing it to be a case of tardy appearance of the menses had treated it accordingly, till the increased violence of the symptoms awoke his suspicions as to the cause, when he proposed an examination, which being reluctantly submitted to, confirmed his suspicions. He then immediately requested her friends to summon my attendance. On my arrival I found her suffering intensely with bearing down pain, and pain in the hips and loins, accompanied with a frequent desire to pass urine, and with tenesmus. I proceeded to make an examination and discovered a tumour resembling the head of a fœtus, presenting at the vulva; but on a careful examination perceived that the tumour was soft and yielding, and tender to the touch, and could detect no entrance into the vagina. Placing the hand upon the hypogastric region, I could distinctly discover, through the abdominal parietes, the uterus distended and reaching nearly to the umbilicus. Having no doubt that it was a case of imperforate hymen, I proceeded to operate, by penetrating the tumour (near the middle) with a sharp pointed bistoury, and making an incision downwards. A dark tar-like fluid immediately gushed forth, which occasioned instantaneous relief from her sufferings: another

incision was then made upwards, which completed the division of the membrane. About five pints of fluid were discharged, which resembled tar in colour and consistence, and was unattended with fetor. A tent was introduced into the vagina to prevent the closure of the hymen, and there was a slight discharge of purulent matter for three or four weeks. At the next monthly period the menstrual flux made its appearance, and has continued to recur with great regularity ever since.

Case of Melanosis.—By ISAAC PARRISH, M. D. (Extracted from an essay on that disease, *Read before the Philadelphia Medical Society.*)—Rachel Yorke, a widow aged 43 years, of dark complexion and slender frame, applied for admission into Wills' Hospital, January 7th, 1837, in consequence of a fungous tumour on the ball of the great toe.

She stated that the tumour had been evident for the last three years, and had varied but little in size during this period. In the spot from which it originated, there had always been a purple mark or mole about the size of a mulberry, which was supposed to have been congenital. On her admission the tumour was about half the size of a pigeon's egg, of a soft and fleshy texture, the apex larger than the base, and the whole exterior presenting a red, and tolerably smooth ulcerated surface. She has suffered but little pain in the part, has frequent attacks of hemorrhage from the ulcerated surface. After using much exercise, the tumour generally increases in size, and she feels pain in the groin attended with swelling in the lymphatic glands. There has never been any purulent or ichorous discharge from the surface of the sore, and seldom any inflammation around it, although she stands and walks upon the foot a great deal. On the upper surface of the toe, about half an inch from the nail, there was a black tubercle, slightly elevated above the skin, and about the size of a shilling. This black spot made its appearance soon after the sprouting out of the ulcer, and had increased but little since that time. The nail of the toe was perfect. She stated that various applications had been made to the ulcer, by some of which its size would be reduced for a short time, but no permanent improvement had ever occurred. When the ulcer was lessened the black spot upon the upper surface would become larger and more elevated, and would resume its usual aspect when the ulcer regained its ordinary size. The patient stated that her health had suffered but little from this disease—during the whole period she had made her living by washing clothes and other laborious work. She has occasionally been troubled with chills and fevers, which would confine her for a few days. When these attacks occurred the tumour was always aggravated, and the lymphatic glands would be tender and inflamed. During an attack last summer, the inflammation run so high, that an abscess formed above the groin and discharged a considerable quantity of pus.

Under these circumstances she was admitted with a view of trying the effect of rest, position, &c. and of amputating the toe if they had no effect.

She was directed to keep the limb elevated, and to apply mucilage of slippery elm, and a poultice of the ground elm at night. She took alterative and aperient medicines, and was kept upon a light nutritious diet.

In a few days there was a slight amendment in the appearance of the toe, which continued, however, but for a short period. Other applications were resorted to without effect. At the end of two weeks I left the city for a few days, and placed her under the care of my friend Dr. Littell. During my absence she was seized with a severe chill, followed by high fever, attended with pain and inflammation in the groin.

Purgatives were directed by Dr. Littell, with leeches to the groin. On my return the violent symptoms had subsided, but she still had fever, loss of appetite, thirst, &c.; her strength was failing, and she was rapidly emaciating.

She was discharged at her own request February 14th, and was attended at her daughter's by Dr. Spackman, who had previously been her physician. She continued to grow worse, hectic fever fairly set in, and she died on the 21st of March. A few days previous to her death I was requested to visit her. She was much emaciated, the expression of her countenance anxious, pulse rapid and feeble, intense thirst, difficulty of respiration, particularly in the recumbent posture; this symptom was so striking that she reminded me of a patient labouring under asthma. The tumour on the toe was slightly increased in size—she complained of pain in the knee and groin. The knee joint was much swollen, and was evidently distended with fluid. The glands of the groin were much enlarged, and an abscess was forming on the upper and inner portion of the thigh.

Post-mortem examination, in the presence of Dr. Littell and two medical students. The toe was first removed, and carefully examined, the diseased mass was entirely confined to the cellular and adipose tissue—the phalanges and joints immediately under the diseased mass were not altered in appearance. The internal structure of the tumour was not examined as I wished to preserve a cast of the preparation.

The usual incisions necessary for exposing the cavities were next made. The divided integuments exhibited nothing unusual—the melanotic deposit was not discovered in the cellular membrane in any other situation than that described, although our examination to this point was not as accurate or general as would have been desirable.

On raising the sternum, the lungs on both sides were found to be thickly studded with melanose masses—the right lung was hepatized throughout a large portion of its structure, the left was equally full of the melanotic deposit, but appeared healthy in other respects—there was no adhesion of the surfaces of the pleura on either side, and no extraordinary effusion in either cavity. The pleura was free from the melanotic deposit.—Heart and its membranes sound.

In the abdomen we discovered a considerable number of small melanose bodies scattered over the surface of the peritoneum, varying in size from a pin's head to that of a cherry. The melanose matter was in a fluid state, and contained in a transparent cyst. The bodies were attached by a thin neck to the peritoneum, and were perfectly black. The liver, spleen, and kidneys presented no unusual appearance.

The lymphatic glands of the groin were considerably enlarged and altered in their structure. Several of them were the size of a hickory nut, and on cutting into them, they were found to contain a portion of the melanotic deposit, confined in cells or cavities of various dimensions: by pressing the gland between the fingers, the black matter was forced out of the cells, having the appearance of tar in colour and consistence. A large abscess occupied the groin, from which nearly half a pint of thin, ill-conditioned pus, with dark particles floating in it was discharged.

The cavity of the knee joint was now exposed, and a large quantity of sero purulent matter evacuated.

The brain was not examined.

Remarks.—The history of the preceding case might lead us to infer that the primary disease was melanosis of the cellular and adipose tissue of the toe. The fungous tumour being the effect of the ulceration of the melanose tumour. The almost simultaneous appearance of the black tubercle on the upper surface of the toe, and of the fungous tumour, would certainly tend to favour the idea of their identity, or at least of these being the product of the same kind of diseased action. This view of the case is confirmed by the opinion of my friend Dr. Pepper, who saw a case somewhat similar to the preceding in the Hospital of M. Biëtt in Paris. In this case a number of black tumours appeared on the surface of the body in different situations, resembling exactly the tumour on the upper

surface of the toe in the case now under consideration. In process of time the skin covering these tumours would break, and a fungous ulcer sprout out, having the same external characters as that just described. This patient became paralytic on one side, rendering it probable that a melanose tumour had formed in one of the hemispheres of the brain, and was in this condition when Dr. Pepper left Paris.

In the *Medico-Chirurgical Review* for October 1836, I find an account of a case of fungoid tumour succeeded by melanosis, by Dr. Norris of Stonebridge. In this case the tumour was situated between the umbilicus and pubis, and had originated from a congenital mole—it was half the size of a hen's egg, of a deep brown colour, ulcerated on its surface, and discharged a fetid ichorous fluid. In a few months after the appearance of the tumour, distinct nodules sprung up around, some with slender necks, others with broader bases, the glands in the groin were swollen and slightly tender to the touch. At first the general health of the patient was not impaired, or were the pursuits of business interfered with. The disease, however, in the course of time, became more general over the surface, bluish spots appeared on the back, sides, and face. Loss of appetite gradually came on, followed by dyspnœa, cough, and fever—dropsy finally supervened and the patient died.

On examination immense numbers of melanose tumours were found scattered over the stomach, intestines, mesentery and omentum. The mesenteric glands, the pancreas, liver, and kidneys were affected, especially the liver. The lungs were thickly mottled throughout the greater part of their texture. The heart was literally encrusted with melanose spots, both externally and internally.—The dura mater was studded with them, the brain itself was healthy.

From the examination of this case, Dr. Morris had reason to think that melanosis is of a kindred genus with fungoid tumour, being but a variety of fungoid disease. This opinion is endorsed by Dr. Johnson, the learned Editor of the *Review*, who thinks also that neither melanosis nor fungous hematodes are new diseases, but that they were known to the ancients under the general name of cancer.

Analysis of Solar Light. Within a few days past, notices have been circulated in the public prints, that *Melloni* had succeeded in depriving the sun's rays of all their heat, by transmitting them through certain media, consisting of water and coloured glasses; and also, that Mrs. Somerville, by means of a screen of pale green glass, had abstracted from them that property by which they darken the chloride of silver, and effect chemical changes.

Whilst these results have been obtained in Europe, experiments of a like character have been carried on in Virginia, the event of which is of far more interest to chemists, the effects being equally as certain, and the means being in the hands of every experimenter. Dr. Draper, Professor of Chemistry in Hampden Sidney College, writes to us that he has found during the last year, that there are several solutions, which are transparent as respects the sun's light, yet opaque to his calorific ray, and others which are transparent both to his light and heat, but opaque to the chemical ray; for it does not follow, that a body transparent to light, should be transparent to heat or to the chemical rays. A solution of sulphate of copper and ammonia, and a decoction of tannin, are both transparent to the light of the sun, yet they are nearly opaque to his heat. Nor is this condition of things at all regulated by colour—the first mentioned of these substances is blue; the second brown; and the sulphocyanate of iron, which is red; the chloride of chromium, which is green; the muriate of cobalt, which is pink; and the bichromate of potassa, which is orange; though they are all when in solution, transparent to the rays of light, yet are either opaque or only translucent to the rays of heat. Dr. D. has found more recently, that solutions which are perfectly colourless and clear as water, exercise very different functions on the rays

of heat; and, though in an examination of upward of two hundred and seventy such solutions, none have yet been found which are absolutely opaque to the rays of heat, there are some which approach that condition. Vegetable solutions exercise a similar influence. Turnsole, dissolved in water, when the thickness is about a quarter of an inch, permits only about four rays of heat, out of every 100 which fall upon it, to pass through—this is a blue solution. A decoction of Brazil wood, which is red; a decoction of logwood in alum, which is purple; and tincture of turmeric, which is yellow, have the same effect.

A solution of the chromate of potassa is nearly opaque to the chemical ray, but is transparent to the ray of light; and more than semitransparent to the ray of heat. The bichromate of potassa seems to be absolutely opaque, for a beam of light, three inches in diameter, converged to a focus by a convex lens, after traversing such a solution one-fourth of an inch thick, could not blacken chloride of silver in an exposure of fifteen minutes. All the vegetable solutions above named are likewise nearly opaque. But a solution of the sulphate of copper and ammonia, when in a mass thick enough to stop all the rays of light, is freely permeated by the chemical rays. It is curious that several *yellow* metallic solutions, as the chloride of gold, the chloride of platinum, the permuriate of iron, and the hydrosulphate of lime, act about as powerfully as the chromate of potassa, but this peculiar tint is not always effectual in producing this result, for the yellow oil of turpentine, and the yellow ferro-hydrocyanate of potassa, will prevent the blackening of the chloride.

These experiments therefore decide the question of the separate existence of calorific and chemical rays in solar light; they also enable the philosopher to insolate each ingredient and operate upon it by itself, a matter of the utmost importance in investigations of the properties of light.

Rhinoplastic Operation.—It affords us much gratification to announce the successful performance by our young friend Dr. J. MASON WARREN of Boston, of an operation for the restoration of a lost nose. We consider this operation so creditable to the operator, and indeed to American Surgery, that we shall give the details of the case in full, nearly in the words of the author, as recorded in the Boston Medical and Surgical Journal, March 8, 1837. Dr. J. Mason Warren is the son of Professor John Warren of Harvard University, one of the first surgeons in this country, and his son has, in the operation under notice, shown himself worthy of his sire.

The subject of this case, was a young man æt. 28, who three years ago last spring, while playing very roughly with one of his companions, received a violent blow on the nose, which dislocated the cartilage, driving it at the same time over to the left side. Some inflammation came on in the nose at the time of the accident, which very shortly subsided; and as he was out of town, and at a distance from medical advice, nothing was done to replace the cartilage, which remained in the situation into which it had been driven by the blow.

In the following spring, while pursuing his ordinary occupations, a small red spot appeared on the right cheek just below the eye; this very soon increased in size, the inflammation gradually spread, first attacking the lip, thence extending to the nose, which became red, swollen, and finally ulcerated; and, in the course of eighteen months the whole nose, cartilages, septum, bones, &c. were successively attacked, and finally completely destroyed. The ulceration had also extended to the cheek of the opposite side. Subsequently to this, cicatrization gradually took place, leaving the patient in the state in which I saw him, six months after his recovery from the disease.

At this period, having accidentally come across a description of the Taliacotian operation in an old magazine, he applied to know whether anything of a similar kind could be done to remedy his frightful deformity. The following was his state as he appeared on the first examination.

The nose, as described above, had entirely disappeared, leaving in the place

it originally occupied an opening about an inch in diameter, bordered by a firm cicatrice; the septum of the nostrils was destroyed, and the two nasal cavities thus thrown into one; externally a small cicatrix descended from the lower and left edge of this opening to the angle of the mouth. In the course of the disease the four front teeth had been lost, and this, together with the absorption of the alveolar processes, had caused a sinking of the upper lip, which had fallen an inch below the level of the lower one. An opening also existed between the lip and upper jaw, through which a probe might be passed from the mouth into the nasal cavity. The sense of smell was quite lost, and he was subject to an occasional running of the tears over the face, arising undoubtedly from the too sudden contact of the air with the lachrymal ducts.

A thorough examination of his case having been made, and finding there was no positive obstacle against the possibility of the success of an operation, the difficulties of such an operation as would be required were distinctly stated to him, the improbability of its succeeding so as to restore the organ in such a manner that the deformity should not be known, that the new nose might become very much flattened, and perhaps on the appearance of cold weather gangrene might take place, and finally, that even his life might be endangered by it. I felt it my duty to state the case plainly, having seen all these accidents occur from the operation, and death in two cases being the consequence, from severe erysipelatous inflammation of the scalp. Notwithstanding all these objections, he said that he was ready to incur any risk which would give him the least chance of having the deformity under which he laboured obviated, as life in his present state was hardly desirable.

Having determined to submit himself to an operation, it was though expedient to delay it a few weeks, in order to watch the case a little, and prepare him for it by a course of diet and regimen.

At the end of six weeks his health had materially improved, and as he still persisted in the determination of having an operation performed, preparations were made to do it as soon as possible, as on account of the approach of cold weather, no time was to be spared. At this period he was seen by my friend Dr. Peace, of Philadelphia, who was present with me at one or two operations of the kind practised by Dieffenbach in Paris, and he declared, as his opinion, that the appearance of the patient offered every chance of success. The favourable circumstances were—the healthy state of the integuments surrounding the opening of the nasal fossa, the great height of the forehead, the whiteness and delicacy of the skin, and, added to this, the good state of his health. All the preparations having been made, the operation was performed on the seventh of September.

A piece of pasteboard, cut in the shape of the letter V, that is, of a triangular form, and with a projection from its base, corresponding to the columna of the nose, was placed upon the forehead, and a trace made around it with the nitrate of silver; this being used in preference to ink, as recommended by Lisfranc, in order that it might not be liable to become effaced by the blood. A trace was also made around the opening of the nasal fossa, at the points where it would be necessary to remove the integuments for planting the new skin taken from the forehead. This was done the night previous, in order to prevent any undue delay on the day of the operation.

All unnecessary articles of clothing being removed, the patient was placed on a table in a recumbent position, his face towards the window, and the operator behind so as to have the full command of the head. The traces made by the nitrate of silver were about two-thirds of an inch apart between the eyebrows, each side of the triangular portion of the skin was three inches and a quarter in length, with a base of three and a half inches, and the projection for the columna of the nose, which was to be taken entirely from the scalp, previously shaved, was an inch and a half long and two-thirds of an inch wide.

The head being firmly supported by two assistants, the incision was commenced between the eyebrows, and the flap of skin dissected up so as entirely to isolate it from the skin of the forehead, except where, for the purpose of nutrition, it was left adherent at the root of the nose. The incision on the left side between the eyebrows was extended a little farther down than on the right, the better to facilitate the twisting of the flap. This incision included the skin, subcutaneous cellular tissue, and a portion of the occipito-frontalis muscle, care being taken not to raise the periosteum, from fear of necrosis.

The flap thus dissected and twisted round to the left side, was carefully wrapped in a compress of linen cloth, and before the operation was proceeded farther in, attention was given to diminishing the large wound made in the scalp. Little hemorrhage had taken place, and the temporal arteries which had been cut, very soon retracted and ceased bleeding. The angles of the wound were first brought together by the twisted suture, two pins being employed on either side. Its edges between the eyebrows were also approximated in a similar manner; by this means the wound in the forehead was diminished at once to less than half its original size; it was still farther reduced by the use of a few strips of adhesive plaster, and a little scraped lint filled up the remainder of the wound. Some lint spread with cerate was spread over the whole surface, a pledget, and the whole secured by a bandage round the head.

The next object was to fix the borrowed skin in its place. In order to do this, it was necessary to freshen the borders around the opening of the nasal fossa, the traces of which, as stated above, had been previously made with nitrate of silver. For this purpose a short narrow knife, somewhat similar to a cataract knife, was used, and a strip of integument a third of an inch in breadth, removed, including all that portion which had been at all indurated during the cicatrization of the ulcerations. The knife was also passed between the lip and the upper jaw, in which existed, as before stated, an opening large enough to pass a probe, and the adhesions between the two, for the space of an inch, entirely cut away. This was done for the double purpose of giving the columna of the nose a more deep and firm adhesion, and, in the inflammation which would subsequently ensue, to close up the unnatural communication between the mouth and nasal cavity.

The flap was now brought down into its place, its angles a little rounded with the scissors, the better to simulate the alæ of the nose, and the whole secured in its place by pins and points of the interrupted suture. From that portion of the skin which was to form the columna of the nose, the epidermic side was pared a little, so that it might form an adhesion not only underneath to the jaw, but on its sides to the quadrangular wound made for it in the upper lip.

A little scraped lint was now placed under the ends of the pins, and a strip of oiled lint introduced into each nostril to prevent adhesion; another strip was placed upon the nose to preserve its temperature. The dressings were secured by a band of adhesive plaster fixed to the forehead above, and partially divided in the middle, so that it might descend on each side of the nose to the lip.

During the whole of this long and painful operation the patient kept up his courage, and not a cry was uttered, nor the least struggle made that could at all impede the motions of the operator. Not much blood was lost, and his strength was so little exhausted that he was able to run up stairs to his chamber. He was ordered to go to bed immediately, to keep perfectly quiet, and a watcher left with him, who had directions, in case of his falling asleep, to prevent him from either rolling over on his side, or raising his hand to the nose so as to derange the dressings; also to wake him immediately should he breathe through the nose. To have arrow-root or gruel and lemonade, for nourishment.

On visiting him in the afternoon he was found comfortable; the new nose was warm, and had bled a little from the edges which formed the nostrils, both showing the circulation was not at all impeded.

Sept. 10th. Passed a good night, slept well, pulse seventy-nine, complains of no pain, the nose of about the natural temperature. The gentleman who watched with him thinks that the lint on the right side of the nose was occasionally raised a little during expiration, when the patient slept soundly; he awoke him once or twice on this account. A purgative was ordered of the sol. sulph. magnes. and liquid farinaceous diet. A piece of cork was confined between the teeth, so as to keep the mouth open, it being hoped that this might prevent him from closing his lips during sleep and breathing through the nose.

11th. Quite as well, passed a quiet night, has a good appetite, pulse eighty. Watcher says that he occasionally made a motion to raise his hand to the nose, but, as if instinctively aware of the impropriety of it, withdrew it again without touching the dressings. The introduction of the cork into the mouth had entirely effected its object, by preventing the passage of air through the nose.

12th. The first dressing took place four days after the operation, and the following was found to be the state of the parts. The dressings on the forehead,

after being well soaked were first removed. The angles of the wound were found to have united throughout, so that two of the pins were at once dispensed with. Union had also taken place in its lower part, just above and between the eyebrows; the remainder of the wound, that is, its central part, in which union by the first intention could not take place, was suppurating well, and filled with healthy granulations.

The nose was next attended to. Upon the lint being removed, which had become very much hardened and caked in by the coagulated blood, it was found that entire union had taken place on both sides. The alæ of the nose and lower edges could not easily be seen without making use of too much violence in removing the dressings, which at present was not thought necessary. The columna was curved inwards, and the sutures concealed. The nose was of the natural colour and temperature, and the circulation through it seemed uninterrupted.

Two strips of lint dipped in oil were laid over the cicatrix on each side of the nose, and no other dressings used. The patient was allowed to sit up a little, and to take any article of food of the liquid kind he might fancy.

On the 13th he was quite as well, with the exception of a little œdema of the upper eyelids, arising, undoubtedly, from the pressure of the bandages and other dressings on the forehead. One of the pins was removed from the forehead on the 13th, and another, the only remaining one, on the following day. The dossils of lint which had been placed in the nostrils still remained there, firmly caked in by the drying of the pus, blood, &c. These were not removed until the 19th, when their places were supplied by two pieces of hollow sound. Some difficulty was found in the introduction of the tube into the right nostril, which had become partially filled with granulations.

On the 14th a quantity of hair began to appear on that portion of the skin forming the columna of the nose, which, as will be remembered, was taken from the scalp; this hair, from time to time, required to be removed with the scissors. He was put upon a nourishing diet, with the caution to use the jaws as little as possible. He stated that occasionally, when he swallowed, he had a sensation as though he would "swallow his nose."

15th. The remaining pins were removed from the side of the nose, and the two sutures which confined the alæ; and on the 17th, ten days after the operation, the two ligatures, which confined the columna in its place, were also removed. At this period, the following was the state of the parts. The wound in the forehead, from the adhesion by the first intention which had taken place, and subsequent contraction, had diminished to a third its original size, and the small triangular space which remained, together with that portion of the scalp from which the columna of the nose had been taken, was filled with healthy granulations. From the wound to the root of the nose was a lineal cicatrix two inches in length, and continuous with the cicatrix on the left side. Adhesion of the integuments had taken place on both sides of the nose; at the right alæ, however, the union was not quite so perfect as at the left; that is to say, the whole thickness of the skin did not appear to have united. To assist the union, the skin of the face which lay under it was slightly scarified with the point of a lancet.

The columna of the nose was a little curved backward, and its edges had retracted inwards upon themselves. The inside of the nose was suppurating well, and at its upper part adhesion seemed to have taken place between the two bleeding surfaces which had been opposed to each other. The tip of the nose was well defined, and its edges were curved inwards so as well to simulate the natural appearance of the alæ; and just above the alæ, apparently from atmospheric pressure, a depression was taking place, forming their superior boundary. This was assisted by the patient making an occasional pressure with his fingers at these points. He feels well, has a good appetite, and sits up all day. He breathes freely through the tubes placed in the nostrils, which require to be daily removed in order to clear out any obstructions which may collect in them.

At the end of a month the wound in the forehead had contracted to about a quarter of its original size. Adhesion of the nose was perfect at all its points. The openings of the nostrils were regularly rounded, and simulated well the natural appearance. The tip of the nose is well preserved, and a regular curve takes place from its root to the end of the organ.

At the end of six weeks he was able to go out and walk about during the

evening, but as the weather became cold he was advised to confine himself to the house, as cold evidently had a very great effect in retarding the cicatrization of the wound in the forehead.

At the end of two months it was thought time to proceed to the second operation, which was required to remove the twist existing at the root of the nose. It will be easily conceived, that underneath the pedicle which connected the nose with the forehead, a small portion of sound skin existed, and that of course no adhesion had taken place between this portion and the pedicle lying over it. The method usually adopted by operators has been to cut the pedicle, after sufficient union of the nose has taken place below to justify the separation of it from its source of nutrition, and to fix it down at the root of the nose, in a transverse incision made for it at that point.

To this method there are some serious objections. First, the danger of inflammation in separating the pedicle; second, of sloughing of the organ on the vessels being cut which have hitherto supplied it with blood; and lastly, the very perceptible transverse cicatrix left after the operation. The method resorted to in the present case is liable to none of these objections, except, perhaps, the first one, in which the danger is much diminished.

This operation was as follows. An incision was made, commencing at the internal angle of the eye, and extending to that part of the base of the nose where adhesion had not been able to take place; a corresponding incision was also practised on the pedicle. The skin being well dissected up from its adhesion, a small portion of integument was removed from the upper angle of the wound, where it had become wrinkled from the twist in the pedicle. The edges were brought together by three points of the interrupted suture. The same operation was to be performed at a future day on the other side, where, however, the opening was of about half the size, and not so perceptible. Union took place, throughout, by the first intention. Some trouble was experienced, however, by the formation of a small abscess in the new cicatrix, which suppurated and discharged itself.

Four months after the operation, the cicatrization had become complete at all points. He now declares himself entirely well, no secretion takes place from the nostrils, and on looking into those cavities a new skin is found to line them throughout. The nose itself has contracted gradually, so that by the first contraction of the integuments, and the subsequent contraction from suppuration, it has decreased to almost two thirds the size of the flap which was taken from the forehead. Contraction also seems to be going on in its longitudinal axis, so that the distance between the tip of the nose and the mouth, daily increases. This will be much more perceptible, and the whole physiognomy of the nose much improved, when the four front teeth, which have been lost, are replaced. This will bring out the under lip, and at the same time raise the tip of the nose. The cicatrix in the forehead has become very small, and is gradually assuming the colour of the surrounding integuments. The scalp from which the columna was taken is lost in the hair. The nose is quite firm, of a good form, and the cicatrix on each side hardly perceptible; at the root of the nose on the left side, and at that portion which formed the pedicle, a small fissure still remains, which is for the present concealed by a strip of court plaster.

The health of the patient has never been better, his sense of smell is returning, and the tears no longer run over the face, and he, as well as his friends, congratulate themselves both on the moral and physical effects of the operation. He is now able to make his appearance during the daytime, which he has not done before during the last two years, and no person would observe anything remarkable in the nose, without a minute examination, when it would be difficult to explain the remarkable anatomical changes which have taken place.

Lithotripsy.—Professor N. R. SMITH writes us that he has successfully performed this operation in six cases, and promises an account of them for our next No.

Medical College of the State of South Carolina.—The number of medical students in this institution the past session was 106.

UNIVERSITY OF PENNSYLVANIA.

MEDICAL DEPARTMENT.

At a Public Commencement, held March 31, 1837, in the Hall of the Musical Fund Society, the Degree of Doctor of Medicine was conferred by the Rev. John Ludlow, D. D., Provost, on the following Gentlemen, Students of this Institution. A Charge to the Graduates was then delivered, by Hugh L. Hodge, M. D., Professor of Obstetrics.

NAMES.	RESIDENCE.	SUBJECT OF ESSAY.
Abbott, Samuel M.	New York,	Puerperal Peritonitis.
Albertson, Edmund	Indiana,	Autumnal Fever.
Allen, Stephen D.	New York,	Physiological Relations of Mind.
Allison, Joseph J.	Pennsylvania,	Certain Pulsations in Reptiles, &c.
Anderson, John C.	South Carolina,	Bilious Fever.
Anderson, Joseph M.	Tennessee,	Cholera Asphyxia.
Bagley, Robert S.	Virginia,	Cholera Infantum.
Bailey, Daniel R.	Maine,	Spinal Irritation.
Bailey, John H.	Virginia,	Dysentery.
Baldwin, William F.	Alabama,	Icterus.
Bass, Isham E.	Virginia,	Cholera Infantum.
Bauduy, Peter John	Delaware,	Idiopathic and Traumatic Tetanus.
Berkeley, Carter N.	Virginia,	Fever peculiar to the Blacks of the South.
Bicknell, Rufus	Connecticut,	Influence of the Mind in causing and curing Diseases.
Blunt, Benjamin B.	Virginia,	Irritation.
Brady, Thomas	Philadelphia,	Conception.
Brewer, John M.	Pennsylvania,	Fever.
Brinker, George M.	Virginia,	Gonorrhœa.
Brown, Granville L.	Virginia,	Bilious Fever.
Brown, Thomas	North Carolina,	Congestive Bilious Fever.
Buffington, Lee W.	Pennsylvania,	Blood-letting.
Burnley, William R.	Virginia,	Malaria.
Casey, William B.	New York,	Idiosyncrasy.
Chew, Philemon	Mississippi,	Hæmorrhoids.
Chisholm, James G.	Alabama,	Reproduction.
Clinton, Thomas G.	Virginia,	Laryngitis.
Clymer, Meredith	Pennsylvania,	Lateral Curvature in the Female.
Connell, Alfred B.	Alabama,	Enteritis.
Corbit, James	Delaware,	Icterus.
Crowe, Robert Fulton	Nova Scotia,	Asphyxia.
Cunnington, William P.	England,	Physiology and Phenomena of the Muscular System.
Daniel, John H.	Virginia,	Syphilis.
Dashiell, Richard R.	Illinois,	Peculiarities of Animal and Vegetable Life.
Daveis, Gilman	Maine,	Dietetics.
Dickeson, Thomas P.	New Jersey,	Eupatorium Perfoliatum.
Dillon, Alexander S.	Virginia,	Gonorrhœa.
Downing, Arthur W.	Virginia,	Scarlatina.
Earle, Pliny	Massachusetts,	Insanity.
Edgar, Samuel D.	Tennessee,	Diagnosis.
Edwards, Albert S.	Virginia,	Acute Laryngitis.
Edwards, William H.	Tennessee,	Pathology of Miasmatic Fever.
Farish, James C.	Nova Scotia,	Morbid Anatomy of the Lungs.
Fell, Townsend	Pennsylvania,	Influence of the Mind over Disease.
Field, Cridland C.	Pennsylvania,	Cholera Infantum.
Fondey, John	New York,	Jaundice.
Frink, Lorenzo	North Carolina,	Bilious Remittent Fever.
Funsten, Oliver R.	Virginia,	Angina Pectoris.
Gibson, George	South Carolina,	Delirium Tremens.
Gilliam, Joseph S.	Virginia,	Intermittent Fever.

NAMES.	RESIDENCE.	SUBJECT OF ESSAY.
Glass, James S.	Mississippi,	Inflammation.
Glover, Francis Y.	South Carolina,	Congenital Deformities.
Goelet, Edward H.	North Carolina,	Trachitis.
Graff, Frederick,	Philadelphia,	Peritoneal Enteritis.
Grant, Edward Ingleton	New Jersey,	Intermittent Fever.
Griffin, John S.	Kentucky,	Lithotomy.
Haile, Thomas Lee	Louisiana,	Yellow Fever.
Haines, William E.	Pennsylvania,	Mercury.
Hall, Chauncey Austin	Massachusetts,	Counter Irritation.
Hamm, Strother T.	Virginia,	Cholera Infantum.
Hanks, John A.	North Carolina,	Chlorosis.
Hardison, Hardy	North Carolina,	Intermitting Fever.
Harrison, William J.	Virginia,	Erysipelas.
Haseltine, Moses G.	N. Hampshire,	Ozoena.
Hastie, J. Hamilton	Alabama,	Indigestion.
Hendrick, John B.	Georgia,	Inflammation.
Hester, Abner	Tennessee,	Emetics.
Hill, Herbert W.	Mississippi,	Chorea Sancti Viti.
Holt, Michael W.	North Carolina,	Scarlet Fever.
Hoskins, James H.	North Carolina,	Cynanche Trachealis.
Hunter, William	Virginia,	Formation of Medical Character.
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Peters, George B.	Tennessee,	Neuroses.
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Pope, John H.	Georgia,	Purgative Remedies.
Rennolds, Birkitt G.	Virginia,	Modus Operandi of Medicines.
Reynolds, James	Alabama,	Fractures.
Ricaud, Lawrence M.	Maryland,	Pneumonia.
Ritchie, Robert R.	Virginia,	Contractions after Burns.
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Smith, Henry H.	Pennsylvania,	Experiments on Spinal Marrow and Nerves.
Smith, James B.	Georgia,	Bilious Diseases.
Smith, William B.	Virginia,	Generation.
Stewart, Ferdinand C.	Virginia,	Causes of Cardiac Sounds.
Stewart, Joseph D.	Pennsylvania,	Infantile Convulsions.
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Wilson, Goodridge A.	Virginia,	Capillary System.
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NAMES.	RESIDENCE.	SUBJECT OF ESSAY.
Gholson, Robert A.	Virginia,	Acute Dysentery.
Hilliard, John T.	North Carolina,	Acute Dysentery.
Hooke, William B.	Mississippi,	Cystitis.
Jeffreys, Jacob H.	North Carolina,	Cynanche Trachealis.
Johnson, Daniel E.	North Carolina,	Acute Gastritis.
Pettit, John	Pennsylvania,	Erysipelas.
Pope, Cullen J.	Georgia,	Scarlatina.
Rankin, Archibald	Pennsylvania,	Uterine Hemorrhage.—————8.

W. E. HORNER, *Dean.*

Philadelphia, March 31, 1837.

THE
AMERICAN JOURNAL
OF THE
MEDICAL SCIENCES.

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- JAMES MAC DONALD, M. D. *Resident Physician to the Bloomingdale Asylum, New York.*
- JAMES MOULTRIE, JR. M. D. *Professor of Physiology in the Medical College of the state of South Carolina.*
- REUBEN D. MUSSEY, M. D. *Professor of Anatomy and Surgery in Dartmouth College, New Hampshire.*
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EDITOR—ISAAC HAYS, M. D. *one of the Surgeons to Wills' Hospital, &c.*

TO READERS AND CORRESPONDENTS.

Dr. N. R. SMITH's cases of Lithotripsy were received too late for the present number.

The following works have been received:—

A Discourse on some of the Diseases of the Knee-joint; delivered before the Massachusetts Medical Society; at their annual meeting, May 31, 1837. By GEORGE HAYWARD, M. D., Professor of the Principles of Surgery and of Clinical Surgery in Harvard University, and Surgeon to the Massachusetts General Hospital. Boston: 1837. (From the author.)

The Human Brain: its configuration, structure, developement, and physiology; illustrated by references to the nervous system in the lower orders of animals. By SAMUEL SOLLY, Lecturer on Anatomy and Physiology in St. Thomas's Hospital, &c.; with 12 plates. London: Longman & Co., 1836. (From the author.)

Sur l'Influence des Saisons sur la mortalité a differens ages. Par M. le Docteur H. C. LOMBARD. (From Professor Dieffenbach.)

De l'Influence des Professions sur la durée de la vie. Par le Dr. H. C. LOMBARD. (From Professor Dieffenbach.)

Recherches Historique et Médicale sur l'origine, la nature, et le traitement de la Syphilis. Par M. DEVERGIE, Ainé. Suivie du Rapport a l'Académie de Médecine. Par M. CULLERIER. (From Dr. Fricke.)

Notice sur le traitement simple, antiphlogistique et rational, des Maladies Vénériennes. Par M. DEVERGIE, Ainé. Paris: 1835. (From Dr. Fricke.)

Du chlore employé comme remède contre la Phthisie Pulmonaire. Par J. N. GANNAL. Paris: 1832. (From Dr. Oppenheim.)

S. A. W. STEINIE Tabulæ Anatomix; Fasciculi Primi pars prior et posterior; Regio colli intermedia; Regio colli lateralis, et Regio infraclavicularis. Haunia: 1831-3. (From Prof. Otto, of Copenhagen.)

Observations on the Anatomy and Physiology of the Capillary Blood-vessels. By ANDREW ALEXANDER. (From the author.)

A Treatise on the Malformation, Injuries and Diseases of the Rectum and Anus; illustrated with plates. By GEORGE BUSHE, M. D., formerly Professor of Anatomy, Physiology, &c. New York: French & Alard, 1837. (From the publishers.)

Directions for the establishment and government of Lunatic Asylums. Translated from the French of BRIERRE DE BOISMONT, M. D., by E. Quincy Sewell, M. D. (From Dr. T. R. Beck.)

Surgical Observations on Tumours; with Cases and Operations. By JOHN C. WARREN, M. D., Professor of Anatomy in Harvard University, and Surgeon to the Massachusetts General Hospital. Boston: 1837. (From the author.)

A Narrative of the Dissolution of the Medical Faculty of Transylvania University. By LUNSFORD P. YANDELL. Nashville: 1837. (From the author.)

An Essay on the Mineral Waters of Carlsbad, for Physicians and Patients. By Chevalier JOHN DE CARRO, M. D., of the Faculties of Edinburgh, Vienna and Prague, and Physician at Carlsbad during the season. With observations on the Microscopic Animalcules about the Hot Springs of Carlsbad, by Mr. A. J. C.

CORDA, of Prague; and a Flora of Carlsbad, by Professor C. B. PRESL, of Prague. Prague: 1835. (From the author.)

Proceedings of the President and Fellows of the Connecticut Medical Society, in Convention, May, 1837; with a list of the members of the Society. New Haven: 1837. (From the Society.)

An Address to the Annual Convention of the Medical Society of Connecticut, convened at Hartford, May 10th, 1837. By THOMAS MINER, M. D., President of the Society. New Haven: 1837.

A Report of the New Haven County Medical Society on the expediency of repealing that section of the Medical Laws of this State which excludes irregular practitioners from the benefits of law in the collection of fees. New Haven: 1837. (From Dr. H. Bonson.)

A Catalogue of the Officers and Students in the Medical and Law Departments of Cincinnati College—First session, 1835-6. To which is appended, a list of the Graduates at the first Medical Commencement; with a Report from the Trustees to the Corporators, and the names of the Board of Trustees for 1836-7. Cincinnati: 1836. (From Professor Drake.)

The British and Foreign Medical Review, for January and April, 1836. (In exchange.)

London Medical Gazette, for February, March and April, 1837. (In exchange.)

The Dublin Journal of Medical Science, for May, 1837. (In exchange.)

Zeitschrift für die gesammte Medicin mit besonderer Rücksicht auf Hospital praxis und ausländische Literatur, for August, September, October, November and December, 1836. (In exchange.)

Bibliothek for Læger, No. 4, 1834, and Nos. 1, 2 and 3, 1835. (In exchange.)

The Transylvania Journal of Medicine and the Associate Sciences, new series, for January, February, March, April, May and June, 1837. (In exchange.)

The Boston Medical and Surgical Journal, for May, June and July, 1847. (In exchange.)

The Southern Medical and Surgical Journal, for April and May, 1837. (In exchange.)

The Western Journal of the Medical and Physical Sciences, for April, 1837. (In exchange.)

The Select Medical Library and Eclectic Journal of Medicine, for May, June and July, 1837. (In exchange.)

Papers intended for publication should be sent, *free of expense*, as early after the appearance of the Journal as possible, in order to be in time for the ensuing number. Such communications should be addressed to "CAREY, LEA & BLANCHARD, Philadelphia, for the *Editor of the American Journal of the Medical Sciences.*" All letters on the *business* of the Journal to be addressed exclusively to the publishers.

ERRATA.

Page 85, bottom line, for "dissertations,"	read "dissections."
87, line 22 from top, for "arms,"	" "arm."
89, " 14 " " "a,"	" "common."
95, " 11 " " "originated,"	" "originates."
102, " 23 " " "specification,"	" "specific action."
469, " 13 " " "professional,"	" "professorial."

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XX. A Discourse on some of the Diseases of the Knee-joint; delivered before the Massachusetts Medical Society, at their annual meeting, May 31, 1837. By George Hayward, M. D., Professor of the Principles of Surgery and Clinical Surgery in Harvard University, and Surgeon to the Massachusetts General Hospital. Boston: 1837. pp. 28, 8vo. - - -	468
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Fig. 1.

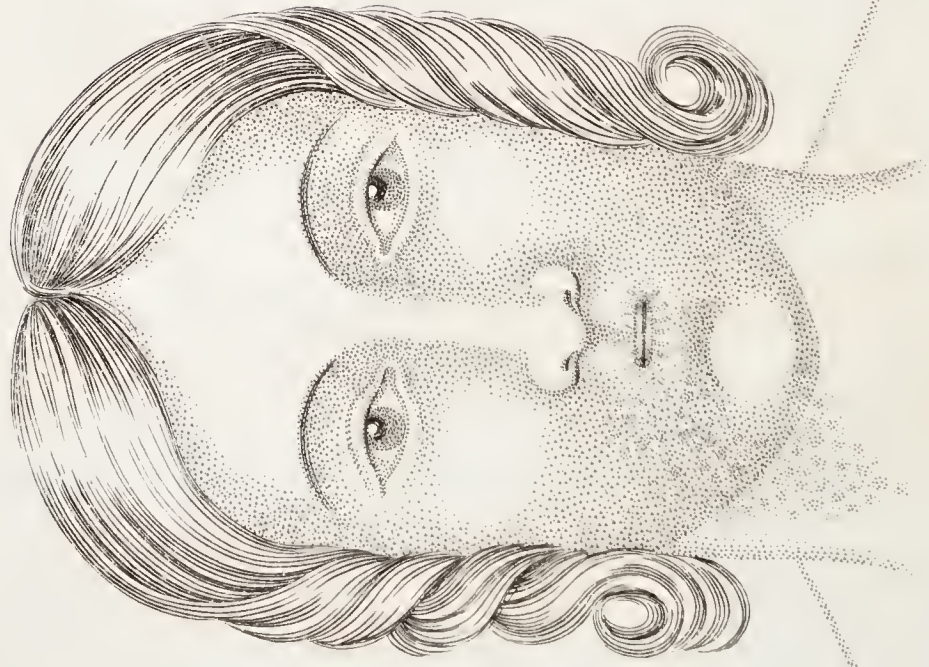


Fig. 2.

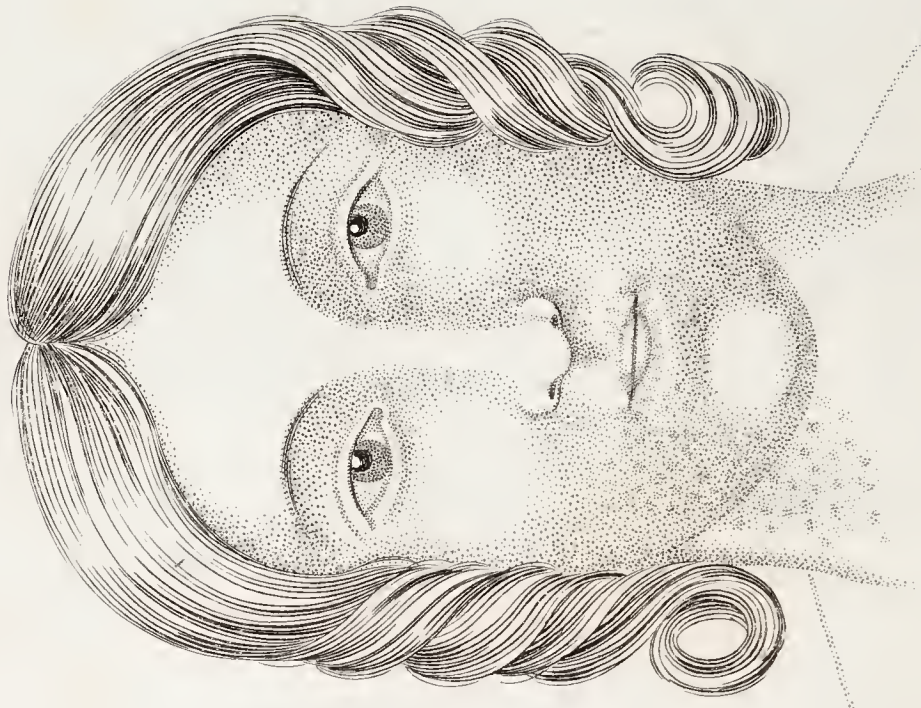


Fig. 1.



THE
AMERICAN JOURNAL
OF THE
MEDICAL SCIENCES.

ARTICLE I. *On the Typhus Fever which occurred at Philadelphia in the spring and summer of 1836.* By W. W. GERHARD, M. D., one of the Physicians of the Philadelphia Hospital, Blockley. [Part second.]

The cases published in the first part of this memoir (see this Journal for February, 1837) are sufficient to illustrate the leading facts of the pathological anatomy of this form of fever.

The glands of Peyer were found not merely free from the peculiar lesion occurring in dothinenteritis or typhoid fever, but these follicles and the rest of the intestine were more healthy in the petechial fever than in the majority of other diseases. We are the more certain of the state of these glands because our attention was closely directed to this subject, and we had previously made most numerous examinations of the glands in typhoid fever and in other diseases; we could therefore pronounce with certainty as to their actual condition. The mesenteric glands were always either normal or very little injected; and the spleen was altered only in one third of the whole number of patients.

The lesions of other organs were as various as they are in most acute diseases, and evidently depended in a great degree upon the season, or upon the accidental circumstances in which the patient was placed. Thus, we had several cases of pneumonia in the months of March and April, while the lesions of the intestine were remarkably insignificant. But in the warmer season of June, July and

August, diarrhœa was frequent, and was accompanied not by a lesion of the glands of Peyer, but by softening or other affections of the mucous coat of the colon.

The pathological anatomy of a disease will usually afford us useful data which may point out the analogies which unite it with other maladies. Now the absence of a permanent characteristic lesion, at least in the solids of the body, is one of the most remarkable peculiarities of the exanthemata. In all these diseases there is no constant lesion, with the exception of the eruption itself. The analogy is not limited to the pathological anatomy, as the subsequent part of this memoir will prove; and without wishing to lay too much stress upon the resemblances which may exist in some of the symptoms of a disease which presents a strong analogy, we cannot pass them by without due attention. As far, therefore, as the pathological anatomy will direct us, we are constrained to class typhus fever amongst the exanthemata. We shall presently examine the relations which the symptoms may bear to those of other diseases.

In the account which we shall give of the symptoms of the epidemic of typhus, it is not our intention to subject them all to a rigid numerical analysis. We shall describe the symptoms, but enumerate those only which are sufficiently important to render the diagnosis between this fever and dothinenteritis precise. It should, however, be remembered that the symptoms which are stated without an exact arithmetical estimate of their relative frequency, were all carefully noted and examined attentively, one by one. There can, therefore, be little danger of any inaccuracy in the estimate given of their relative frequency, and still less of incorrectness in their description.

Exterior. An eruption of a peculiar character appeared on the skin of 32 out of 36 whites, in whom it was noted. Of the four cases in which it was not visible, one died upon the seventh day of the disease, and the others presented slight symptoms of fever, which disappeared in the course of four or five days. It was also visible, though less distinctly, in mulattoes; and we may infer that the colour of the skin alone prevented its developement in the negroes. It consisted of petechiæ, which in not more than six cases resembled the rose-coloured spots of dothinenteritis. The petechiæ assumed the form of small reddish or purple spots from the breadth of oneline, or even the eighth of an inch, down to that of a minute point. They were not elevated above the surface of the skin, and were without the regular round or oval shape of the rose-coloured spots. The colour of the petechiæ at first was of a lighter red, and could with difficulty be distinguished from the spots of typhoid fever; but on the second

or third day they assumed the dull red or purple colour of the eruption proper to the typhus; sometimes they were nearly black.

The eruption of petechiæ must therefore be regarded as a characteristic symptom, for it was present in nearly every case in which the symptom was sought for. The eruption is indeed quite as constant as that of measles or small pox; for those cases in which it could not be detected either died before the day on which it usually appeared, or were ephemeral, abortive cases of the disease, which ceased before passing through its regular periods. The petechiæ appeared from the sixth to the eighth day, after the beginning of the symptoms, and disappeared from the fourteenth to the twentieth day. But the time of their disappearance varied much, and the gradual diminution of their colour rendered it difficult for us to indicate its precise date. The eruption would occasionally fade without entirely disappearing, and again resume its former colour. This sudden and unexpected fading of the eruption coincided with a depression of strength, and was often of fatal prognosis. After death, a slight bluish ecchymosis, easily traced in the thickness of the true skin, indicated the place of the larger petechiæ, while the smaller were no longer visible. The regular progress of the eruption proves the close analogy which exists between typhus and some of the eruptive diseases, especially scarlatina and measles.

There is a marked difference between the petechial eruption and the rose-coloured spots of typhoid fever. In typhoid fever the eruption is rare, very seldom extending beyond the abdomen and thorax; whereas in the epidemic typhus, the eruption is almost always general, extending to the limbs as well as the trunk. Whether the two eruptions are occasionally found together in the same individual, I cannot state positively. Besides, in typhoid fevers the reddish or rosy hue of the spots remains, and they are scarcely ever of the dull livid or purple tint of the petechiæ of typhus. It is certain that in a few cases the larger petechiæ resembled rose-coloured spots so closely, that without much care they might have been confounded with them.

The eruption of sudamina, or minute transparent vesicles about the groins and neck was also observed, but more rarely than the petechiæ. It was not so frequent as in typhoid fever.

The skin in whites presented other changes than those which have been mentioned. A constant symptom observed in every case was a dull, livid, red hue of the countenance, extending nearly over its whole surface; sometimes this colour approached a purple. It coincided with a strong dark red suffusion of the capillary vessels of the conjunctiva which appeared at the same time with it, but usually dis-

appeared at an earlier stage than the injection of the eyes. The conjunctiva never presented the bright red tinge or the brilliant aspect observed in acute inflammatory diseases of the brain, or of the eye itself. The expression was dull, and the blood-vessels had a dark red tinge, instead of their usual scarlet hue. The suffusion of the face and eyes was so constant and so well marked in the fully formed disease, that it served almost as a pathognomonic sign. It was generally most evident with patients of a full habit of body. Towards the close of the disease, the reddish colour was gradually changed into a dull ashen tint, which remained until the entire recovery of the patient.

Emaciation did not take place in the early stages, it was indeed not very visible until the fever began to decline. If the other symptoms continued without increased severity, the wasting away of the flesh under such circumstances was generally a favourable sign, and indicated approaching convalescence. Stout, corpulent persons generally suffered more than those who were of a spare habit of body, and more frequently perished; and in a large majority of our dissections we therefore found the fat extremely abundant.

The *strength* of the patients failed in a great degree, nearly from the beginning. Thus, the man whose case is alluded to in the first part of this article, evidently lost his strength from the very moment of the attack, which seemed to arise from strict contagion. Other patients were able to walk about, but none were able to attend to their usual business except with extreme difficulty, and only in the earliest stage of the disease. But this prostration of the early stage was never so intense as that which comes on at a later period, when the fever begins to subside. The secondary prostration is of a more severe character, and is distinguished from the temporary loss of strength occurring at the beginning of the disease, by the coldness of the extremities, and the weak, fluttering pulse which usually attend it. In itself, the loss of strength at this stage indicates the subsidence of the fever, and is not a sign of bad import; but it must be watched, and if it advances too far, it often proves destructive to the patient. This second period of prostration, was in general easily combated by appropriate treatment.

The *cerebral symptoms* were certainly amongst the most characteristic of the typhus fever. They appeared very early in the disease and continued with greater or less intensity throughout its whole course. We shall examine them separately.

Stupor. About the same time with the prostration of strength, there was more or less stupor observed. It was perceptible in our

patients from the moment when they complained of their first symptoms. It was frequently slight, but could always be recognised by a little attention, and gradually increased until the middle period of the disease, when it was most intense; nor did it cease entirely until the strength of the patient returned. There were usually some traces of it during the convalescence. The stupor rarely passed into complete coma, except in fatal cases; hence coma was always a most unfavourable sign. Still, to a moderate extent, it was occasionally witnessed without being followed by the same danger as in ordinary diseases.

Vertigo and confusion of sight was also one of the first symptoms: thus in most cases in which they were noted, they occurred on the first day, and in the others very near the beginning of the disease. The same symptom exists in the dothineritis, but in a less constant and less severe degree. In the typhus fever it appears so early, and is so well marked, as to impress a peculiar appearance upon the physiognomy of the patient.

Tinnitus aurium, generally combined with partial deafness, is also very constant. Sometimes it is confined to one ear, but usually extends to both. The deafness is much more intense than in typhoid fever, but it may still be dissipated for a time by addressing the patient in a loud tone of voice. Some ringing of the ears and a slight vertigo frequently remain after the other symptoms of the disease are completely removed.

The *sleep* was in the early stages uniformly disturbed, although the patient lay almost constantly in a state of somnolence. Still it was not a sound sleep, nor did this take place until the patient either recovered or sank into a profound state of stupor. As in dothineritis there was somnolence, but nearly complete absence of refreshing sleep.

The *intelligence* was impaired from the earliest stages. At first the alteration was so slight as to escape the attention of an inexperienced observer, but when the fever had fully set in there was at least confusion of the intellect, and nearly always delirium. This last symptom was absent only in a few cases. The delirium was not noisy, except in about one patient out of twenty. In the immense majority of patients it was dull, muttering and incoherent. The delirium became more tranquil, and was exchanged for ordinary stupor or coma, when the fever was at its height. It did not cease entirely until the complete establishment of convalescence. Even after recovery the intellect of the patient was more enfeebled than it is in ordinary diseases, and regained its usual strength but slowly.

The *nervous symptoms*, which are usually considered by the French

writers as belonging to the ataxic form of dothineritis, were present in a greater or less degree in every patient who survived the first two or three days after the attack. Those who perished thus early, died of the mere depression and the accompanying stupor; but from the third to the seventh day, various disorders of the nervous functions manifested themselves. These symptoms were the following:—The *sensibility* of the skin was universally augmented when the stupor was not so great as to render the patient insensible, or nearly so, to all external impressions. The tenderness, upon pressure, was so much increased as to induce us to refer the external soreness at the epigastrium, when pressure was made upon the abdomen, to an affection of the internal organs; but on more careful examination the sensibility was nearly equally increased in every part of the body, and was evidently external. The cutaneous tenderness was preceded by muscular soreness, which lessened as the skin became more sensitive.

In no case did we detect paralysis previously to the approach of coma; if it seemed to exist, we soon ascertained that it was only apparent, and caused by the extreme prostration.

Subsultus of the tendons at the wrist was observed in three cases out of four; in the more severe cases the subsultus extended to the muscles of the legs and face. When it appeared at the face, the corners of the mouth were drawn rapidly to one side or the other, giving a singular expression to the countenance. In the worst cases the subsultus extended to nearly all the muscles of the body, keeping the patient in a constant state of tremor, not unlike a severe chill. Such cases were not necessarily fatal, although the sign was of bad import, but of vastly less importance than in typhoid fever. The spasmodic contractions of the muscles were not permanent; hence there was no constant rigidity observed in any case. The smaller muscles were much more affected than the larger ones.

Abdominal symptoms.—In the ordinary typhoid fever of France, the symptoms connected with the alimentary canal are amongst the earliest and most prominent in the disease. The diarrhœa is constant, and occurs amongst the first symptoms; its intensity bears a tolerably exact, but not an invariable, relation to the extent of alteration in the intestinal follicles. As the lesion of the follicles is so constantly present, it is considered by most authors as the cause of the diarrhœa, although this symptom partly depends upon the irritation of the large intestine. In the epidemic of typhus, the intestines were found remarkably free from disease of any kind, except towards its conclusion, when diarrhœa became a frequent symptom. It did not, however, appear until the middle of summer, when the weather became hot and

dysentery was very prevalent. From the epidemic of dysentery which then existed, and the absence of any distinct and constant anatomical lesion, we were led to infer that the diarrhœa was an accidental, instead of a permanent symptom. In short, that it was by no means characteristic of the fever, but that it might appear as a symptom, just as it often does in pneumonia and other febrile diseases. Patients never seemed to perish from the severity of the diarrhœa, which was in general quickly and readily checked.

The *appetite* was generally destroyed in the advanced stages of the disease, and in whites it disappeared from the beginning. If they took food, it was mechanically, because it was offered to them, and evidently not from a desire of eating. The blacks, on the other hand, did not lose their appetite so universally; some asked for solid food, and ate the usual quantity of it. As the symptoms of anorexia was then far from constant, it is obviously less important than it is in typhoid fever, where it constitutes one of the earliest and most important phenomena. Nausea or vomiting was extremely rare, so that I scarcely find either of these symptoms noted in a single case. The thirst was great; it was intense in bad cases, when the patients retained sufficient consciousness to desire drink, and only lost by the supervention of entire coma. In convalescence it gradually ceased.

The *conformation of the abdomen* presented every possible variety. In the greater number, it was slightly tympanitic, but in many patients it was either retracted, or altogether of the natural form. The degree of sensibility of the abdomen was generally very doubtful, as the extreme tenderness of the skin gave rise to so much inconvenience that the patient confounded the pain which was seated in the viscera with that which was confined to their cutaneous covering.

The *urine* was examined very attentively, and was remarkable merely for its extraordinary freedom from brick-red deposit, or the changes so frequently observed during the course of fever.

The *thoracic symptoms* were of two kinds; those which were almost essential to the disease and rarely absent, and others which were accidental and frequently wanting during its whole course. In the earliest stage of this disease, although the respiration was usually remarkably vesicular in the whole anterior part of the chest, it was feeble and imperfect at the posterior part. This feebleness was accompanied by a dull sound on percussion, and was shown by our dissections to depend upon the engorgement of the lungs, which appeared very early in the disease; it was frequently combined with a subcrepitant or mucous rhonchus. The latter symptom was by no means constant, and was always vastly more frequent in the earlier cases

which occurred in the winter than in those which were admitted in the summer, towards the close of the epidemic. The engorgement ceased at the same period that the dark, livid, red tinge of the face disappeared, and was apparently owing to similar causes. The sibilant rhonchus which is usually present in dothineritis was rare in the typhus. Pneumonia was the most frequent accidental lesion, more frequent in winter than summer, and differed from the ordinary pneumonia merely in the greater abundance of loose mucous rhonchus and the slight developement of bronchial respiration, and of fine crepitas; it was also rarely attended with pain. In many cases there was no pneumonia, although the bronchial tubes were evidently inflamed, and the respiration offered the characteristic rhonchi of bronchitis. This last affection was most prevalent in the colder weather, when epidemic catarrh chanced to prevail. It was the converse of the dysentery which affected the patients attacked during the warm weather. During the prevalence of influenza, the bronchitis sometimes appeared as the first symptom, and rendered the diagnosis for a time extremely obscure. Nor did it become clear, until the cerebral symptoms were developed, and the stupor and injected eye showed that the disease was of a more serious character.

Phthisis, in one case, began during the course of the fever, and rapidly ran through its stages; but it was much less frequent after typhus than dothineritis. In the case alluded to, the patient was a young man of slender frame, and probably already bore the seeds of the tubercular disease. When phthisis existed previously to the typhus, the influence of the latter upon the course of the former disease, was extremely doubtful, unless the case had been already advanced. A few tuberculous patients sank under typhus in a day or two after the attack; but in general they seemed more exempt from it than other individuals, as was proved by the small number of tuberculous subjects found amongst those dead of the fever, (not exceeding one in ten,) and by the comparative exemption of our consumptive patients from the effects of the contagion. Although the fever patients were placed in the same ward with those affected with phthisis, the instances in which it appeared amongst them were extremely few in number. This comparative exemption was rendered the more evident, as a considerable number of patients affected with diseases of the brain or the heart became victims of the disease. We even believed that the diseases of the brain (as paralysis from previous hæmorrhage) evidently favoured the developement of typhus.

The action of the *heart* was remarkably feeble, although the extent in which its shock was felt did not seem less great than in health. This

diminished action of the heart is mentioned by many writers on typhoid fever, and is very nearly a constant symptom. It was of course greatest when the pulsation at the wrist was feeble, and easily compressed. In patients already exhausted by a previous disease, the feebleness of the heart and the pulse was extreme from the earliest period of the disease, and sometimes constituted the most prominent symptom. These cases were generally fatal.

The *pulse* was usually more frequent than in typhoid fever. Of thirty cases which terminated in recovery, taken at hazard from the whole mass of observations, the pulse ranged from 70 to 140 in the minute. The pulse was always noted in the morning, and occasionally in the evening, so that the average was a little lower than if it had been always counted several times in a day. Of these patients the maximum frequency of the pulse was less than 100 in the minute in four cases, from 100 to 110 in six cases, 110 to 120 in eleven, and 120 and upwards in nine.

Of ten cases taken also without selection and terminating fatally, the pulse varied from 68 to 150. But one patient, however, presented a pulse less frequent than 90 in the minute; and that patient, whose pulse was at 68, died two or three days after the attack, before the fever was completely developed. That rapid course occurred in one already exhausted by protracted chronic disease. The maximum frequency was less than 100 in one patient, from 110 to 120 in another; but in the eight others, that is, four-fifths of the whole number, it was above 120. We may therefore consider a pulse of more than 120 in the morning as an unfavourable sign, though of course not necessarily of fatal import.

The evening exacerbation was well marked, and coincided with increased heat of skin. The pulse was sometimes slow: when the skin was cool and the patient extremely exhausted, this slowness indicated a depressed circulation, and was usually a fatal sign. But in general the circulation was equable and the pulse frequent. The fever was distinctly continued, but with an evening exacerbation. In a large majority of our patients the pulse was very easily compressed, and in most cases it was decidedly feeble, at least in the advanced stages at which our early cases were admitted. In some patients it was full, but soft and compressible from the beginning. In a few, where some local inflammation was present, the pulse approached in character that of ordinary inflammatory diseases. The peculiar undulation in the motion of the artery, which is so frequent in typhoid fever, was rare in the typhus. When the fever abated the pulse sank very rapidly, and during the state of collapse attending

the beginning of convalescence, remained extremely feeble. When death approached it was also feeble, but it did not sink so suddenly or so rapidly.

The *temperature* of the body was elevated above the natural standard, as in other febrile diseases; still it offered some peculiarities which were more marked in this fever than in others of analogous appearance. Instead of the warm but frequently moist surface of the body attendant upon dothineritis, we observed a dry skin, which gave to the hand the peculiar pungent sensation frequently alluded to by writers, and termed "*calor mordicans*." This pungent heat was so remarkable, that the resident physicians and others would frequently diagnose the disease from this symptom only. There was occasionally perspiration, but this was rare, and never abundant, until convalescence approached. The heat of the skin declined towards the termination of the disease; and instead of subsiding merely to the natural standard, it evidently sank below it. This coolness of the surface coincided with the feebleness of the pulse, and required a supporting treatment.

There was another symptom closely connected with the skin. It was the peculiar *odour* from the body of the patients. This was pungent, ammoniacal, and offensive in the most severe cases; especially in fat, plethoric individuals: in some cases its smell resembled that of putrid animal matter, and remained so a few days before death. The patients who exhaled the odour in the strongest degree were observed to communicate the disease by direct contagion more quickly than others. In the cases of several of the nurses, there could be no doubt of the direct transmission of the disease from the person of these offensive patients. The bodies of these individuals putrefied very rapidly after death, but before putrefaction was completely established the odour was rather less pungent than it was during life. Cases of this kind are to be classed amongst those which procured for these forms of fever the appellation of putrid.

The *blood* drawn from patients affected with typhus fever has always attracted much attention. Even in dothineritis, it is more altered from its natural appearance than it is in most diseases; but in the petechial typhus, the change of aspect is still greater. We examined it in various stages of the disease, except those only in which the prostration was so considerable as to render blood-letting obviously improper. At a very early period it was dark, without the buffy coat, and offered a large, but soft and dark coloured, coagulum. At a more advanced stage, it presented in some patients the dissolved appearance described by various authors as characteristic of the typhus

or putrid fevers. When this dissolved state of the blood occurred, the patients were feeble, and did not bear the loss of more than two or three ounces of blood without fainting. Notwithstanding this state of the blood, only three or four patients in a hundred presented the sloughs and ulcerations about the sacrum and trochanters which are so common in dothineritis or nervous fever. Perhaps this absence of the sloughs was owing to the shorter duration of the typhus—at least, the fact is curious. Vibices, or large purple spots, were not recorded in more than two or three cases. Of course they could not have been discovered in the blacks; but at any rate, from the small proportion occurring amongst the whites, the number of these spots must have been small amongst all patients.

We cannot more clearly illustrate the symptoms occurring in the cases which terminated in recovery than by presenting two or three cases as examples. The last of these three patients has just recovered, (April, 1837,) and offers one of a series of sporadic cases of fever from time to time admitted into the hospital. They all originated in the house, and the subjects of the disease were in previous good health when exposed to the cause of the fever.

CASE VII.—Dr. F., one of the house physicians at the hospital, had been extremely devoted to his duties, and had spent much time in the ward in which many of the fever patients had been placed. At the time of his attack, the patients were in a great measure concentrated in this single ward. Dr. F. had resided in the house but a short time, and was of a full robust habit of body and in excellent health.

About the first of July, 1836, he found himself growing gradually weaker and appetite declining; but although he was sensible of a general feeling of uneasiness, he had no local pain except a dull, deep-seated aching in the centre of the forehead. There was no disturbance of any of the digestive functions. On the 7th he felt better, and took much exercise, in the hope of escaping any serious illness.

On the 8th he went through his usual duties in the morning, but while in the ward, he was seized with a chill and nausea. These symptoms he referred to a furuncle situated on the right hand, between the finger and thumb. On the 9th, complained of cephalalgia, uneasiness at the stomach, and fever; he applied a poultice to his thumb, and took ten grains of calomel and one grain of ipecacuanha. Nausea and vomiting came on in an hour, and after drinking freely of warm water, he threw up a quantity of greenish bile. The next day he took a Seidlitz powder, which was followed by five evacuations. In the evening he attempted to resume his duties, but, from feebleness,

discontinued them. From the 9th to the 14th the fever diminished every morning, but increased towards evening, so as to induce the patient to believe that he was attacked with ordinary remittent. He took the effervescing draught, and lived on light farinaceous diet.

14th. Restless during the night; almost no sleep; vomiting in the morning, but without pain. At 2, p. m., the pulse was full and rather forcible; skin hot and dry; tongue slightly furred; eyes injected; agitation and expression of general malaise. 20 leeches were applied to the abdomen, followed by fomentations; the punctures bled until the next morning. Neutral mixture, \mathfrak{z} ss. q. sec. h. cum ant. tart. gr. $\frac{1}{24}$. In the evening felt better, but was very weak; no pain. Pulse 96, compressible, but of moderate volume. Skin hot and dry. Bowels open frequently during the day; had six watery stools, without pain. The diarrhoea ceased after an injection containing thirty drops of laudanum. A few rose coloured spots, slightly elevated and disappearing on pressure, were scattered over the abdomen.

15th. Slept well; no cephalalgia, but dizziness on rising. Eyes suffused; no tinnitus or deafness; countenance anxious. Anorexia; one dejection. Tongue clammy, pale, coated with a whitish fur; thirst, dryness of the fauces and foetor of the breath; a similar odour, but less marked, exhales from the skin; short, dry cough. Pulse 98; skin hot and dry; numerous spots of a light red colour, some slightly elevated and others on a level with the skin, disappear on pressure, and are scattered over the abdomen and extremities. Spt. mindereri. \mathfrak{z} ss. q. sec. h. Effervescing draught. Sponge surface with diluted solution of chloride of soda. Chloride of lime around the bed.

16th. Sleep disturbed by frightful dreams; same condition of the senses; intelligence and memory enfeebled. Eyes still suffused; purple flush of the face; less anorexia; tongue and thirst as yesterday. Abdomen a little tympanitic. Skin hot, but scarcely pungent. Petechiæ more numerous and of a more decided purple tinge than yesterday. Pulse 100, as yesterday. No stool until an enema containing a little chloride of lime was administered, when some consistent fæces were discharged. Urine reddish, cloudy. Same treatment; gruel.

17th. The petechiæ were larger and more livid on the arms. No sudamina or rose-coloured spots. Extreme prostration; anxious, dull expression of countenance; dizziness of sight; sensibility of skin natural; delirium and insomnia. Pulse 112. Sponge with the solution every hour. Poultice, with solution of chloride of soda, to the abdomen; other treatment as before. During the next night he slept none,

was very restless and delirious, and complained of much cephalalgia; cold applications were made to the head, sinapisms applied to the ankles, and gr. $\frac{1}{8}$ of sulph. morph. given by one of his friends.

On the 18th the injection of the eyes and dulness of intellect had slightly increased, but he had slept for some hours after the morphia. Same treatment, adding two cold enemata.

19th. Petechiæ fading; skin less hot. Pulse 120, moderate volume. Memory more correct; abdominal functions natural; burning sensation at the stomach, after taking the acetate of ammonia. Substitute effervescing draught, and cold enema every three hours.

On the 20th, diarrhœa checked by an opiate enema. Mineral water instead of previous medicine. The skin had become more moist. Pulse less frequent.

On the 20th the pulse had fallen to 84 in the minute; the petechiæ finally disappeared, and the countenance assumed that haggard, wan appearance which succeeds the fever. The patient asks for food, which was now granted, with a little wine, and a few grains of the sulphate of quinine daily. The fever did not again return, although there was a slight diarrhœa; and after the convalescence was fairly established, a small but painful abscess formed in the perineum.

Remarks.—The duration of this case was nineteen days, from the beginning of the fever until convalescence. At the same time that Dr. F. was ill, we had another patient, an assistant in the ward, who was taken while in perfect health. The latter patient was treated more actively. One of the house physicians bled him largely before the fever had attained its maximum, and some local depletion was used. Still the case was more protracted and more severe than that of Dr. F. I do not mean to assert that the depletion aggravated the disease, but only that it was powerless in checking its progress. The cephalalgia, which was intense in the case alluded to, was relieved by the bleeding; but, judging from our experience, a less copious abstraction of blood, by means of a few cups applied to the nucha, would have answered the same purpose just as well, without diminishing the strength of the patient. There was no depletory treatment pursued in the case of Dr. F., with the exception of twenty leeches to the epigastrium, which he applied very early in the disease.

One of the peculiarities of case VII. was the unusually offensive odour exhaled from the skin. It was much more marked than in most of our cases; and although the patient was placed in a large and well ventilated chamber, the smell of the perspiration was extremely foetid until the chlorides were most liberally used in different parts

of the room, in addition to sponging the surface. There was complete loss of recollection.

After the patient recovered, he retained no consciousness of any thing that had occurred subsequently to the first four or five days of his illness. The emaciation was very slight, until convalescence began. It probably did not occur before, from the capillary injection of the face. The skin became pale and sallow when the emaciation was decided.

Although no remedies which we prescribed had any effect in interrupting the course of the disease, still some of the results we obtained from them were both positive and gratifying. The sponging with the solution of the chloride of soda diminished the heat of the skin and lessened the fœtor; perhaps it counteracted the contagious power of the disease. The diarrhœa was controlled by a small quantity of laudanum, which was given so cautiously as not to render the cerebral symptoms materially worse, or to suppress entirely the evacuation from the bowels. But the greatest benefit was derived from the quinine and other tonics, which were given just as the fever ceased. The purgative which Dr. F. had taken at the beginning of the fever seemed to have no influence beyond its immediate operation.

The colleague of Dr. F., who was exposed to the contagion of the same ward, was likewise ill with the typhus, but in a very mild form. He had the petechiæ, the prostration, wandering intellect, and other symptoms, but all so mildly as to require little special treatment. I subjoin his case as an example of the slight varieties of the disease. It is, however, characteristic, and cannot be confounded with dothi-enteritis.

CASE VIII. Dr. J., one of the resident physicians, had been indisposed for three days before the attack was decided. In the morning he felt nearly well, except a slight languor, which did not prevent him from taking more than his usual amount of exercise. In the evening his appetite failed him, and there was some nausea. On the 6th of August he returned from town with increased fever, cephalalgia, pain in the back and limbs, hot, dry skin, and pulse of moderate volume and force. There was a white coat upon the tongue, anorexia, but no nausea or disturbance of the senses.

He took a few grains of blue pill, followed by rhubarb, the effervescing draught, ice water, cold applications to the head, foot-bath.

7th. Slept at intervals through the night. Cephalalgia continues, but the memory and intelligence are both natural. Senses undisturbed, but countenance dull. Pulse 85, smaller and weaker than on the 6th. Tongue moist, with a whitish fur. Some thirst, no de-

sire for food, constipation. Skin hot, dry, no well marked eruption. In the evening there was an increase of headache; pulse 64, irregular. A Seidlitz powder was given, which produced two evacuations; sinapisms were applied to the feet, and the cephalalgia diminished.

8th. Some irregular petechiæ on the abdomen and limbs. Skin generally a little injected, especially the face. Suffusion of the eyes, but senses nearly natural. Fœtor of perspiration distinct but moderate. Skin pungent, at intervals intensely hot. Insomnia, a little delirium in the night. Intelligence apparently but little impaired, still he is unable to reason on any subject, and cannot form a legible letter; but the prostration of strength does not materially extend to the larger muscles. Tongue moist, rosy. Although he has no appetite the thirst is slight. Abdomen a little tympanitic; no cough. Fomentations to the abdomen; sponging with the diluted chloride of soda; effervescing draught; gruel.

The pulse afterwards never rose above 80. The petechiæ disappeared completely on the 12th or 13th. Some subsultus for two or three days. No diarrhœa; return of appetite on the 14th; and on the 18th he was sufficiently well to commence a journey.

Remarks. During the whole of this case the countenance and the state of mind of the patient resembled the effect produced by an over dose of some of the narcotics; or as Dr. J. afterwards stated, it seemed to him that he was partially intoxicated. Combined with this peculiarity there was a constant effort on the part of the patient to disguise his symptoms, and affirm that he was perfectly well. This case could not have been mistaken for one of typhoid fever, because in a mild case of dothinenteritis we never observe such a marked preponderance of cerebral symptoms. When we add the eruption on the skin and the characteristic odour, the diagnosis becomes easy. Indeed these slight cases of typhus are quite as well marked as the more severe examples, and there is but little chance of erroneous judgment.

The next case illustrates the character which the fever assumed when no longer epidemic. It was still a dangerous disease, but in general was easily cured by placing the patient under favourable hygienic circumstances, aided by an appropriate plan of treatment.

CASE IX. John ———, æt. 31, entered one of the medical wards on the 18th of April, 1837. He was employed as a nurse in the black ward for three weeks before his illness, although a white man. When attacked with the fever he was in good health and of temperate habits. For some years he has had no illness, except the venereal disease. On the 11th or 12th of April, felt unwell with cephalalgia,

dizziness, tinnitus in both ears, and confusion of sight. He had no chills nor pains in the loins. On the 13th felt extremely prostrated, but continued his work. No new phenomena appeared until the 15th, when, in addition to other symptoms, he had fever, slight cough, insomnia and sweating. Two stools daily.

April 19th. The patient has reddish hair and complexion; face generally injected; eyes suffused; slight cephalalgia; strength rather better. Intelligence clear, but some delirium in the night. Sweat with pungent odour. Since the preceding day an eruption has appeared over the whole surface of the body; it is in dull red spots, scarcely elevated above the surface of the skin, not disappearing on pressure, and about the size of a flea-bite. No sudamina; tongue reddish, rather dry, slightly coated. Fauces of a bright shining red colour. No tympanitis, or pain in the abdomen; thirst; anorexia; two dejections. Pulse 112, soft, easily compressed. Respiration high, 30 in the minute. Expectoration of thin watery saliva. Posteriorly the percussion is resonant in both sides, but less in the right than in the left lung. The respiration was feeble throughout the right lung, with much mucous rhonchus. *Spt. mindereri, lemonade, gruel, sponging with solution of chloride of soda.*

On the 20th diarrhœa, with four stools daily. Muttering delirium and increase of stupor. Some subsultus at the wrist, and spasms of the muscles of the face. No change in other symptoms. *Same treatment with the effervescing draught. For diet, gruel and a few spoonful of beef tea.*

On the 21st the petechiæ were paler; the larger ones which at first resembled rose-coloured spots were now of a dull livid colour. Five dejections; pulse 120, soft, and compressible. Intelligence more clear since dry cups were applied to the nucha on the previous evening.

The intelligence and the pulse, as well as most symptoms, were not increased in severity until the 24th. The patient then became more dull; constant somnolence. Tongue dry, brownish, chapped, but not furred. The diarrhœa has ceased since two enemata given on the 23d, containing each ten drops of laudanum. Pulse 104, soft and trembling. Petechiæ very feeble. Soda water was substituted for the effervescing draught; and four ounces of wine made into whey were added to the other prescriptions.

On the 25th the appetite was better, and although there was a slight return of diarrhœa the other symptoms continued to improve. The pulse had fallen to 85 and 90 on the 26th, but there was no improvement in the cerebral symptoms. The tongue was very red and smooth,

cleaning in irregular patches. In addition to his other prescription, ten drops of the oil of turpentine were given every two hours. The next day there was a marked improvement of the intellect, with increased appetite. The pulse was 76, and soft. There were two or three stools daily, although the patient was decidedly convalescent. A few grains of sulphate of quinine were substituted for the other remedies on the 28th, and on the 3d of May the patient had regained his strength sufficiently to walk about the ward.

The duration of this case was but fourteen days, decidedly less than the average. It was treated as all ordinary cases were managed; no prescription of a more active nature than the *spiritus mindereri* and sponging with the solution of the chloride of soda was either requisite or appropriate until the accidental symptoms became sufficiently severe to demand a special treatment. Thus the diarrhœa was readily checked by the administration of a small dose of opium in enema, and did not return except in a slight degree.

The laudanum was given in a minimum dose, only ten drops in each enema: this was a precaution adopted to avoid increasing the cerebral symptoms by the narcotic effect of the opium, and the too sudden depression of the diarrhœa. Still there was a temporary increase of the stupor.

The spirits of turpentine were used with evident advantage; this remedy is administered at this stage of fever, when the tongue begins to clean, but is still smooth and shining, by Dr. Wood of this city.

Both this case and that of Dr. F. were complicated with diarrhœa. The occurrence of this symptom afforded an additional reason for their publication. Notwithstanding diarrhœa is so frequent in dothi-enteritis, and when combined with the cerebral symptoms furnishes one of the most important differential characters, still in these cases of typhus, the peculiar eruption, the odour of the skin, and the intense cerebral symptoms removed all doubts.

Diagnosis.—We now approach an important and, in some respects, the most intricate part of our subject. The questions to be solved are, 1st. Whether there exists any essential diagnostic character between the typhus fever we are describing, and the typhoid fever of Paris, which is also not infrequent in America. 2nd. If the diagnosis between typhus and certain autumnal remittent fevers attended with extreme prostration, and other typhoid symptoms, be evident. Under the term typhoid we include various nervous symptoms detailed in the preceding pages, including the prostration and dulness of intellect. We of course use the term at present in its popular signification; and although it does not possess the greatest precision, still it is consecrated

by long usage, and it would be almost impossible to substitute another epithet equally expressive.

By diagnosis we mean the *comparison* of all the symptoms appreciable by us in disease. This comparison requires a careful examination of the symptoms presented during life, and of the phenomena observed after death, in such cases as terminate unfavourably. We do not base our classification of diseases solely upon their anatomical lesions, although these lesions are oftentimes more constant than any other single symptom whatever; but we group together lesions and symptoms whenever they occur together with sufficient frequency to admit this process of generalization.

In accordance with this signification of diagnosis, we admit the existence of phthisis previously to the formation of tuberculous matter in the same manner as we conceive the possibility of typhoid fever occurring without the characteristic lesion which gives to it the name dothinenteritis.

It is not only necessary to compare the symptoms and the pathological phenomena, but also to examine the succession of the symptoms and their relative intensity at different periods of the disease. It is necessary to attend to this order of symptoms even in those diseases in which, from the developement of the local signs, the diagnosis is easy, but in fevers about which so much confusion has existed, as in typhus fever, the most careful observation of all the points is absolutely essential. When we attempt to disentangle this confusion we must group our symptoms, and inquire if one series occurs in a sufficient number of cases for us to admit the succession of the phenomena as nearly, if not quite, constant. If this series does occur in the large majority of cases, the symptoms offer a relation which is sufficiently constant for us to admit them as constituting a distinct disease. If the most important symptoms be present, the absence of one or two, or even a large number of them, does not materially impair the diagnosis; nor does the accidental presence of some irregular symptom which is not usually met with, and does not form a link of the chain, render it uncertain.

We are the more desirous of insisting upon this distinction, as the remarks we made relative to this subject have evidently been misunderstood. The writer to whom we allude supposes that we limit the distinctive characters of the continued fevers purely to their anatomical lesions. We certainly desire to take a more extensive ground; and, from the examination of a large number of facts, we are fully convinced that a set of symptoms which characterize typhoid fever or dothinenteritis, are connected with a lesion of the glands of Peyer.

We have met with no exception; and the cases in which the symptoms are said to have been present without the lesion, are confessedly so few in number as to render them doubtful. At most, they prove only that the fever may pass in some rare instances through its course without its anatomical signs being developed. In the same manner tuberculous fever occasionally proves fatal before the deposit of the morbid substance from which its name is derived. Now this same lesion of the intestines is certainly so uncommon in other fevers, that at Philadelphia, out of eighteen or twenty cases of malignant remittent, and at least fifty of typhus, I have seen but one example in which the glands of the small intestine were at all affected, although they were always examined with scrupulous care. Even in that solitary instance the lesion was slight, confined to the mucous coat, and did not extend to the cellular substance, as in dothinenteritis.

On considering the symptoms of typhus and typhoid fevers, we observe that the latter disease is not confined to any particular season; it commonly attacks individuals of a particular age, and exposed to some unaccustomed mode of life. It sometimes occurs at the same time that an epidemic of autumnal remittent or of typhus exists. I have seen it under both these circumstances, but I have always observed symptoms which distinguished it from either. There could be no doubt of the correctness of the diagnosis, for it was not made in private practice, but in hospitals, where there were always a number of physicians and pupils present to correct and verify the facts.

These remarks are designed to show that the distinctive characters of these fevers are not such as in practice to allow them to be confounded together. Nor was it very difficult to acquire this facility of diagnosis, as all the better instructed students easily attained it. That the very early stages of typhus and typhoid fevers resemble each other is true, but in no greater degree than in the early stages of typhoid fever and small-pox, which I have known to be mistaken for each other by the most experienced observers. When the initial period of the fever is passed, the disease may be readily distinguished. Even very early, before the fever assumes its characteristic appearance, there is usually some fact which may throw light upon its nature.

1. Dothinenteritis is usually a sporadic disease, although it sometimes appears as a wide-spread epidemic. In the latter case the symptoms are so well marked, that these are never doubtful, except in a few of the earliest examples. Now, typhus is very rarely sporadic, and if scattering cases do occur, they are generally connected with an epidemic and follow it, as scattering cases of cholera were observed for a long time after the great epidemic of 1832.

2. Typhus is evidently very contagious; in the epidemic of 1836 it was quite as contagious as small-pox. I am fully convinced of its contagious nature from extensive observation as a physician to the hospital, and from the official visits and inquiries which I made as a member of the Board of Health. Dothineritis is certainly not contagious under ordinary circumstances, although in some epidemics we have strong reason to believe that it becomes so. It bears in this respect the same relation to typhus fever that measles does to small-pox.

3. The initial symptoms of the two affections chiefly differ in the greater stupor, dulness and prostration of typhus, which are in strong contrast to the moderate cephalalgia and disturbance of the senses in dothineritis.

Still there are now and then, perhaps once in twenty or thirty cases, some symptoms which are apparently common to the two forms of fever. Just as in the diagnosis of measles and scarlatina there is usually no difficulty, but we sometimes see cases of a hybrid character in which the most experienced physicians may be doubtful. In two or three cases out of three hundred the symptoms of typhus and typhoid fever seemed blended together; but these were slight forms of disease, which are necessarily less distinct than those of a more severe type. In practice, such cases are too rare to give rise to any difficulty.

The more severe cases of dothineritis sometimes resemble typhus fever very closely, but the resemblance is confined to the symptoms offered by the patient in the most aggravated period of the disease, and does not extend to the succession of symptoms. Indeed, if these cases of typhoid fever are examined at the early stages of the disease, they are certainly more characteristic than the slighter varieties; and although the symptoms occurring during a single day would lead us into error, the comparison of the successive changes will always guide us.

When the disease is completely formed, the characters on which the distinction between the two forms of fevers rest, are: 1. The suffusion of the eyes, which occurs in every case, or nearly every case of typhus fever, with the dusky-red aspect of the countenance. 2. The extreme stupor and inactivity of the mind even when positive delirium does not exist. 3. We also observe in typhus no constant abdominal symptom, and at first merely dulness on percussion and feebleness of respiration at the posterior surface of the lungs. 4. If to these symptoms be added the peculiar eruption of petechiæ, which is scarcely ever absent in whites, there remains hardly a possibility

of error. In the typhoid fever we consider as distinctive characters, the prostration, the somnolence, the slow developement of nervous symptoms, which are not so strongly marked as in typhus. The abdominal symptoms are tympanitis, pains in the abdomen, and diarrhoea. The sibilant rhonchus is heard in the chest; and lastly, there is an eruption of rose-coloured papulæ and sudamina upon the skin.

It is not necessary to insist upon the diagnosis between typhus and the ordinary autumnal remittents. The peculiar season at which these latter diseases originate, their progress and termination, all differ too widely from the symptoms of typhus to allow of error, without extreme inaccuracy of observation.

Some rare cases of pneumonia, especially when they occur in drunkards or patients whose constitution is enfeebled from other causes, resemble typhus in many particulars. Indeed the diagnosis is vastly difficult, were it not for the petechial eruption, as the stupor is sometimes considerable, and the suffusion of the face and eyes nearly as great as in typhus. If in these cases we are totally without knowledge of the early circumstances, we may occasionally mistake a case of pneumonia for typhus fever. But we could scarcely confound the pneumonia, which appears as a mere complication in typhus, with the original inflammation of the lungs. In some of these cases we derive less benefit than we could anticipate from the physical signs, because pneumonia may be present and be readily distinguished by auscultation, but at the same time be strictly secondary. Neither bronchitis nor angina resemble typhus, unless they occur as an epidemic.

Prognosis.—We inferred with considerable certainty that a patient would recover who was admitted at the early stages of the affection, and whose constitution was not broken down by previous diseases or excesses. The event generally justified this opinion, as the results of the treatment will prove. Typhus, therefore, is not a very mortal disorder, although always dangerous. It is scarcely more fatal than dothineritis or pneumonia. When the stupor was extreme, so severe as almost to amount to coma, the prognosis was nearly always fatal; but if the stupor could be diminished, although only for a short time, by rousing the patient or addressing him in a loud tone of voice, the fever might be expected to terminate favourably. We could not trace a close connexion between the degree of subsultus, or the alteration of the senses or sensibility, and the danger of the disease. The affection of the lungs was generally moderate, and was therefore omitted in our calculations; still, decided pneumonia became a grave complication, and evidently proved fatal to one of our patients. The prognosis was extremely unfavourable if the prostration, which is so

frequent in the latter stages of the disease, happened to occur at the beginning, or during its course, before the complete abatement of the fever.

The prognosis was different at various periods of the epidemic. The same rule extended to typhus as to cholera, and other epidemics of malignant disease. At the beginning the cerebral symptoms were more violent than they were afterwards, and our prognosis was grave, in accordance with the great mortality which then occurred. But afterwards, when the fever was less extended, it also became a less mortal disease, and we anticipated the recovery of the patient in nearly every case. This rule of prognosis should therefore not be overlooked by those who may witness similar epidemics; if they are limited and short, the success of treatment will seem very great; but if their form be more violent, a fatal termination may be expected in a considerable proportion of patients.

Treatment.—We are now approaching a most important part of our subject, which includes many different questions. For therapeutics, far from being the most easily settled of those points in medicine which may seem doubtful, is more encompassed with difficulties than any subject connected with the science. After the most patient and candid investigation, pursued without the smallest desire of promulgating any opinion which has not been fully sanctioned, a positive conclusion is frequently not attained; and if such difficulties are experienced by men who are familiar with the history of disease and accustomed to the action of remedies, what shall we think of the pretender who dabbles in these matters without a knowledge of the diseased actions, and still less of the modifications which remedies may cause in the economy? We are therefore doubtful of the results which promise the most success, and we utterly reject all statements not based upon the foundation of close observation and sacred adherence to truth.

To examine our cases with the slightest prospect of attaining any important results, it is necessary to propose two distinct questions. *First*, what has been the effect of a particular remedy or plan of treatment in diminishing the mortality, shortening the duration or mitigating the severity of the disease, considered as a whole. *Secondly*, we must inquire what influence individual remedies may have in diminishing the violence of certain symptoms which increase the danger and the suffering of the patient.

The first question is always of difficult solution, especially with regard to the exanthemata, and typhus and typhoid fevers; all of which seem to run a determinate course. After the disease is formed, this

course cannot be much shortened by art. The materials we possess will not prove sufficient to clear up this matter; complete and accurate results could not possibly be attained, unless the epidemic should again return with equal intensity. The different periods of the epidemic offer such a variety in degree, that we cannot with entire accuracy appreciate the effect of remedies upon the course and termination of the disease; but we can approximate to the truth more or less nearly, and must be governed by probabilities. If the epidemic of typhus should reappear, physicians might readily obtain the solution of most of the therapeutic problems which would arise; but they should begin with a definite knowledge of the peculiarities of the disease, and of the effects of the course of treatment already pursued.

The second question is a more simple one, although we regard it as scarcely less important. Until we discover some means by which our power of arresting or diminishing the intensity of morbid phenomena is vastly increased, we shall probably be compelled to resort to such remedies as diminish the severity of particular symptoms, and thereby materially increase the comfort of the patient. In some instances even more important effects may be produced by these remedies; for, although the intensity of the diseased action attendant upon fever or other general diseases may not be sufficient to destroy the patient, he may still fall a victim to the prostration produced by excessive secretions, or he may die from the functional disorder of particular organs. By watchfulness, and by checking the symptoms, such a termination may often be avoided.

Besides these points of treatment, we should observe some general precautions which are more or less applicable to most cases of disease, but are especially requisite in typhus fever. These precautions are chiefly of a hygienic character; and as their utility is not questionable, we may begin with them.

1. That typhus is clearly a contagious disease, was fully proven in the epidemic of 1836 at Philadelphia. Its contagious property is also admitted by most authors who have accurately observed the same disease. We must therefore immediately take precautions for the complete separation of typhus patients from those affected with other diseases. If the number of typhus cases be small, these precautions need not be so strictly enforced; and may be limited to the free ventilation of the ward and the preservation of absolute cleanliness. The contagious principle does not extend far from the individual, and is readily dissipated by free ventilation. The chlorides of lime and soda were used freely about the bed of the patient; and although they certainly did not prove substitutes for fresh air, they were useful,

and the chlorine in a great degree neutralized the offensive exhalation from the patients. We need not add that the friends of the patient should be excluded from his apartment, except as many as may be required for the necessary services to the sick. This exclusion is necessary to prevent the propagation of the disease, and preserve the air of the room in purity.

In practice we should remember these precautions; and although at the time, typhus may not exist, practitioners throughout the country should recollect this necessity. For partial epidemics of petechial typhus will undoubtedly again occur; and if they are not managed with the necessary care, the disease may extend to a large number of patients who would otherwise have escaped. We are the more earnest in calling the attention of the profession to this subject, as the disputes relative to the contagion of yellow fever has certainly unsettled the minds of many physicians on the subject of contagion in febrile diseases. But as we possess clear demonstrative evidence of the direct contagion of petechial typhus, it would be both absurd and criminal to neglect the appropriate hygienic measures.*

2. Of the influence of particular remedies upon the general course of the disease, and on individual symptoms.

Blood-letting was not employed, except by cups, in the immense majority of our patients. We abstained from it at the beginning of the epidemic, because our patients all entered at an advanced period of the disease, when it was totally unnecessary, and, from their extreme prostration, would probably have been destructive. About the middle and latter period of the epidemic many individuals engaged in various duties in the hospital, who were previously in perfect health, were taken ill with the fever, and afforded us an opportunity of testing the effect of blood-letting. It did not avert the fever in a single case. Indeed the patient who was bled most largely, (℥xx.) on the second or third day, had a protracted and severe attack of the fever. He was a nurse, in very good health, and therefore offered a favourable case for this treatment. At an earlier period of the epidemic we had also used blood-letting in a stout mulatto, taken ill in the hospital, where he was under treatment for a slight venereal disease. I was present at the bleeding, and found that he fainted after the abstraction of five or six ounces. The blood was dark and soft. This patient died. A third patient, who entered on the third day of the

* A pupil of mine, from North Carolina, informed me that he had witnessed a similar fever amongst the negroes. It seemed to be contagious; and from the absolute disregard of cleanliness and the crowded state of the negro cabins, it frequently spread extensively.

disease, was bled to faintness, (Z^{xvj} .) he was relieved of his headache, and in some degree of the stupor. But headache and the more intense cerebral symptoms, as stupor and delirium, returned, and the patient was not convalescent until the 26th day. A fourth patient, in whom the fever was complicated with bronchitis, was bled on the seventh day, and again on the 9th, besides one or two applications of cups. The bronchitis seemed benefitted and the cerebral symptoms diminished, but returned the next day as severely as before. We did not resort to bleeding in many cases occurring amongst the men, as the number of admissions at the beginning of the disease was not very great, and we always regarded the advanced state of the fever, or extreme prostration of the patient at the commencement, as sufficient reasons for abstaining from venesection.

The general results obtained from bleeding in the cases of women, differed but little from those observed in the men's wards. Bleeding never arrested the disease; nor did it apparently abridge its course. There is another fact which should make us the less anxious to resort to blood-letting in most cases. It was practicable only when the disease was of slight or moderate severity. The more violent cases were all attended with extreme prostration, so that the patients were exhausted after very small abstractions of blood.

The advantages of blood-letting were these. In the earliest stages, that is, before the eruption of the petechiæ, there was usually diminution of the cephalalgia, of the disturbance of the nervous system, and of the general feeling of uneasiness experienced by the patient. But the pulse was slightly affected, and the influence of the bleeding upon the heat and dryness of the skin was not very great. Now these advantages are sufficient to induce us to admit the utility of venesection in cases of typhus fever which presented a force and frequency of pulse above the average, and symptoms of cerebral or thoracic inflammation, if they are seen by the physician during the course of the first week. After that period blood-letting becomes a doubtful remedy, and, as a general rule, should be abandoned. Venesection is inadmissible from the very beginning in individuals who react with difficulty, and seem prostrated by the direct impression of the disease.

We are not yet satisfied as to the power of blood-letting in preventing the formation of those internal congestions which are so frequent in the latter stages of typhus. This explanation of its utility, which is given by some of the British practitioners, appears to depend more on theory than on practical observation.

Local blood-letting is obviously free from many of the disadvantages of venesection. As in most cases but a few ounces of blood are

taken, it produces but little exhaustion, and may therefore be prescribed without hesitation in many cases in which general bleeding is inadmissible. Still copious local bleeding will greatly enfeeble patients, and should not be resorted to, unless there is a reasonable prospect of advantage. We consider it as a remedy of considerable utility, as in a majority of cases the patients were decidedly relieved after cups to the nucha. The cupping was most efficacious when directed in the earlier period of the disease; it was nearly without effect in the middle stage, and was positively injurious when the fever began to decline.

Dry cups were used during the epidemic still more frequently than the scarified. They were at first applied to the nucha, and afterwards were often placed upon different parts of the spine, especially between the shoulders. We were at first disposed to undervalue them; but as we never observed any bad effects, except the fatigue they necessarily caused, we afterwards used them less rarely, and considered dry cupping as one of our most frequent prescriptions. The dry cups were applied when the stupor and injection of the eyes were well marked, although the excitement of the pulse was moderate or below the natural standard. The stupor was evidently lessened after the cupping in at least half the cases, and the effect seemed to a certain extent beneficial in about one half the remainder. The nervous symptoms, as subsultus and insomnia, were materially diminished after the cups in nearly every instance. At times, this diminution was temporary, and in a short time the symptoms returned to their former intensity. But in other cases the sleep became sound, and the subsultus ceased for a number of hours.

Dry cups, applied in considerable numbers, and left upon the nape of the neck and between the shoulders for twenty minutes or half an hour, has always seemed to me a more powerful remedy in nervous functional derangement not attended with inflammation, than scarified cups. I have used them largely in the treatment of the apoplectic symptoms of malignant intermittent with the best effects, and resort to them with confidence as one of our most powerful means of controlling disordered nervous action.

Blisters to the nucha were used during the height of the epidemic in a considerable number of patients. In a few cases blisters were also applied to the thighs, but it was chiefly in desperate cases where no treatment could avail much. The effects of blisters to the back of the neck were an obvious diminution of the cerebral symptoms in only one case in six, a doubtful influence upon them in two, and in the remaining three they were nugatory. No increase of cerebral symptoms followed the blisters in any case. Sloughing never occurred,

although it is frequent in dothineritis; and the blistered surface very rarely became ulcerated, or offered any peculiar appearance. From these meagre results we would infer that blisters are scarcely to be ranked among the remedies of petechial typhus.

Sinapisms were a more efficient remedy than blisters. They were of great and undoubted advantage in the stage of prostration which occurs at the decline of the fever, and certainly contributed to save the lives of several of our patients. We also found them useful in diminishing the stupor and prostration during the disease, as well as in reanimating the strength of the patients who were brought to the hospital, exhausted from neglect and a fatiguing ride from a distant part of the town. But if the fever was high and the heat of the skin considerable, sinapisms were vastly less effectual than when the skin was cool, and the patient seemed sinking from mere exhaustion.

Stimulating liniments, as the spirits of turpentine, alone, or combined with soap liniment, or with the decoction of cantharides, were used in particular states of the system only. We found them beneficial at the period of prostration, after the fever had subsided, and occasionally continued their application for several hours. These liniments were also applied when the patients were much exhausted from the fatigue of their journey. In the majority of cases they were neither necessary nor indicated.

Dry heat, by means of warm sand, bran, &c., was directed whenever the temperature of the extremities sank much below the normal standard; it was designed simply to effect a temporary purpose.

Sponging with tepid or cool water was a remedy adopted very early in the epidemic, and was more constantly directed after experience had convinced us of its great utility. We occasionally added the chlorides or some of the alkalies to the water, for purposes already mentioned, but most frequently we used pure water. The water was applied cold, when the temperature of the surface was above the natural heat of the body, and at the same time was dry; but if a slight perspiration had commenced, it was always more prudent to employ a warmer water, as we are accustomed to do in other febrile diseases. We found that by frequent sponging we could regulate the heat of the surface with great ease, and in some degree could moderate the cerebral symptoms.

Cold cloths were applied to the head, or even pounded ice, but with no influence upon the disease, and very little upon the delirium, except when it was noisy and incoherent, as it is in ordinary inflammatory affections of the membranes of the brain. In such cases the application of cold was useful, and occasionally suspended the symp-

toms. The cephalalgia, when intense, was very generally diminished after the use of this remedy, and a constant insomnia was replaced by sound and refreshing sleep.

The influence of internal remedies is more difficult to appreciate than that of external treatment, and their effects upon the general course of the disease are involved in so much obscurity, that we cannot venture to attempt an accurate analysis of them. The reader will, no doubt, in great part, agree with us that in a disease of this nature, we cannot hope that remedies should be able to effect a sudden change in the morbid actions, and a restoration to health, after it is once completely formed.

Emetics. These remedies are recommended by many authors at the commencement of severe epidemic diseases. We used them in a large number of cases. It was not with the intention of removing a morbid secretion or of acting upon the liver, for both stomach and liver were in a state of perfect integrity; but we hoped to produce a shock which might change the morbid actions of the economy, and thus check the fever. With this view an emetic of ipecacuanha was given to several patients at the very commencement of the fever, before the eruption of petechiæ, and even before much stupor occurred; in no instance were we convinced that the disease was cut short. It is true that amongst the patients thus treated there were two or three slight cases, in which the fever was not completely developed, but such attacks occur with and without the emetic treatment; and amongst the whole series of cases treated in this manner, there were several which were excessively severe. From these doubtful effects of the emetic treatment, we would hesitate as to its use; still, if the case should be slight, and any reason should exist for giving an emetic, there is no objection to the ipecacuanha. In severe fever it might be dangerous.

Purgatives are remedies so much in vogue with British and American practitioners, that we may readily imagine that they would be administered in typhus fever. When I visited Edinburgh in 1831, saline purgatives, with tartarized antimony, were the common medicines given in an epidemic of fever, which, I believe, was mild petechial typhus. We administered purgatives in the epidemic of 1836, and although they seemed to relieve some unpleasant feelings of the abdomen, if the patients were purged very early in the disease, there was never any immediate cessation of symptoms, or even a well-marked diminution of the disorder of the cerebral or abdominal organs. We did not persevere in their employment, so that we cannot state what was evidently their effect; but in a general way we can

say that they seem to us to be classed amongst the doubtful remedies, which may be used in future epidemics, if no express contraindication should exist. We are well aware of the great importance attached to purgatives in fevers of this kind, and we do not deny that they may have been most useful in the hands of many practitioners; we only state that in our hands they were not so useful as to justify us in classing them amongst the remedies of undoubted power. They are harmless in the earlier stages of the disease, when the strength of the patient is not much exhausted.

Diaphoretics were used by us habitually. We were influenced by two reasons; one, to relieve the heat of the skin by perspiration, and another because these remedies from their comparative feeble powers, are appropriately given at that period of the disease when we are in doubt whether to act or to trust the cure entirely to the efforts of nature. We used various diaphoretics, the effervescing draught, the neutral mixture, and still more frequently the acetate of ammonia. These remedies never produced other inconvenience than a slight catharsis in a few cases. The acetate of ammonia very rarely acted as a laxative, while it possesses mild stimulating powers, and is therefore one of the most appropriate of the class. From the very nature of these remedies it is difficult to ascertain if they possessed much power over the disease: speaking from our general impressions we should state that they diminished the intensity of the fever, and concurred with the sponging in reducing the temperature. From these probable advantages, added to their freedom from deleterious properties, we employed them in a large majority of our cases.

Tonics were used by us in many stages of the disease. They were of undoubted and great utility towards the latter period of the fever, when the pulse fell in frequency and force, and the heat of the skin diminished. Our notes generally agree in this respect, and prove that tonics not only exercised a gradual and permanent influence upon the appetite and strength of the patient, but that they produced an immediate impression. The improvement was sometimes so rapid, that it was very obvious from one day to the next, and frequently produced a decided increase of strength and appetite. We are convinced that the good resulting to our patients from this class of remedies was amongst the most gratifying results of our treatment. The patients who have just escaped the violence of the fever, require a supporting treatment, or the mortality amongst them will be very considerable.

The tonic most employed was the sulphate of quinine, given in solution; usually about twelve grains in twenty-four hours.

We preferred it for the obvious advantages of its small bulk, and easy solubility. Huxham's compound tincture of bark was recommended by Dr. Parrish as a good tonic for the earlier as well as the later stages of typhus fever. We used it in numerous cases, and were pleased with its effects; although there were certainly at times, some disadvantages following its employment. It was irritating to the stomach, and seemed occasionally to increase the fever. The infusion or decoction of cinchona, especially if acidulated with the elixir of vitriol, seems to us a very appropriate form of administration, although we employed it but rarely. The other vegetable tonics were occasionally directed, but their effects offered nothing peculiar.

Alcoholic preparations were employed very liberally at the beginning of the epidemic, more so than we afterwards thought necessary. This difference arose partly from the extreme prostration of the patients, who all entered at an advanced period of the disease, after much suffering from neglect and privation, partly from the greater depression of strength and of the powers of life which characterized the early periods of the epidemic; and in some measure we were influenced by the advice of practitioners who had witnessed previous epidemics of this nature at Philadelphia, and had found the stimulating practice most useful. The stimulant we usually employed was wine, rarely brandy; in a few cases porter was given. We find it difficult to estimate the precise effects of wine, during the middle periods of the disease, although the strength of the patients was evidently increased, and the muttering delirium diminished. At the early and at the latter stages of the fever there was no doubt as to the evident benefit derived from wine.

We used it in the early stage only under peculiar circumstances. When the patient was already in feeble health, the attack of typhus fever produced extreme prostration, and sometimes proved quickly fatal, without the developement of the ordinary febrile reaction. These cases were similar to some varieties of measles, in which the eruption is indistinct; but the general symptoms are marked by extreme prostration. Under such circumstances wine was given with immense advantage, either simply diluted with water or made into whey.

In the latter stage of fever, wine, porter, and in a few cases even brandy, were given with much benefit. It is difficult to conceive the extreme prostration in which our patients were left after a severe attack of fever. The skin is usually cool and the pulse weak and fluttering, but there is still muttering delirium and great feebleness. Under these circumstances, wine, combined with quinine, and a nu-

trititious diet, produced an effect which was almost magical. The diet and tonics were essential in increasing the permanent strength of the patient, but the immediate benefit derived from the wine was much more obvious.

The quantity of wine given in twenty-four hours, varied from four to sixteen ounces. It was generally from six to eight ounces. Practitioners have remarked that a moderate dose of wine is capable of producing all the good effects which can result from it. In our observations a similar result was obtained, and we rarely exceeded eight ounces daily, except as a temporary prescription to obviate extreme prostration. The quantity given with that object was not limited, but was increased until the strength of the patient improved. The quality of the wine could not be much regarded in hospital practice, but in private life the strong and purer sherries are preferable. We observed no ill effects from the wine, in the earlier period of the epidemic; if any resulted, they were so blended with the symptoms that we could not separately examine them; but where the fever was higher and the prostration less, wine became less useful. We therefore restricted its employment to the periods of prostration, when it was indispensably necessary. The less stimulating diaphoretics were substituted with advantage during the middle periods of the fever. Our observations may account for the great discrepancy of opinion which exists amongst physicians as to the advantages resulting from the treatment of typhus fevers by the free use of wine. Those who recommend wine very early in the fever, have met with severe cases attended with extreme depression, and have almost always given wine with some advantage. If it did not in itself prove successful in entirely restoring the strength of the patient and arresting the disease, it produced a temporary abatement of some of the more prominent symptoms. It does no mischief except in those cases in which the circulation in the brain is extremely active or there is acute inflammation of the lungs. If care be taken to refrain from wine in the two last mentioned circumstances, no inconvenience will result from its use, and in many stages of typhus fever it will be found nearly indispensable.

The *diffusible stimulants*, as ether and Hoffman's anodyne, were used under particular circumstances, chiefly with a view to stimulate the circulation and enable the patient to recover from a temporary depression of strength. The Hoffman's anodyne was commonly given combined with acetate of ammonia. Some of these stimulants was directed as a frequent prescription.

The *carbonate of ammonia* is a remedy very frequently used in the

treatment of typhus. We employed it in accordance with the common usage; especially at the commencement of the disease. Although we are perfectly aware of its power as a rapid and effectual stimulant, particularly when the fever is complicated with a disease of the respiratory organs, we were rather disappointed in its effects. It was irregular in its action, and in the dull muttering delirium of typhus seemed totally without power. In the latter period of the epidemic we therefore used it less frequently, although we did not entirely lay it aside.

Camphor was certainly amongst the most useful and powerful of our remedies. We used it largely in the severe cases, especially those in which the ataxic nervous symptoms were very marked, and we had no reason to repent its employment. In general there was a marked diminution of some of the most prominent and harassing symptoms. We gave the camphor in emulsion in doses of five grains every two hours, and in enema in doses of a scruple. The immediate effect was the lessening of the subsultus and tremors, for which it was chiefly administered, and sometimes the diminution of delirium. In some cases we possessed a complete control over the subsultus, which was immediately checked by an injection containing a scruple of camphor. It would cease for some hours, but afterwards return nearly with its former severity. Still it was a useful palliative, and like most remedies of its class, acted as a useful balance wheel in preserving the harmony of the system until the disease had passed through its natural course. The camphor frequently acted powerfully as an anodyne when sleep had been interrupted by the previous disturbance of the nervous system.

Opium and its preparations were used by us in a considerable number of cases. Dr. Pennock was the most pleased with their effects. When the insomnia had been tormenting and incessant, and the patient was exhausted by agitation and nervous restlessness, a small dose of morphia would generally calm the agitation and procure sleep. This advantage was so great, that we were induced to give opiates in cases which were opposed to our ordinary notions of the proper condition of the system for their employment. We observed no inconvenience from them, and found the morphia occasionally of so much benefit that we should class it amongst the decidedly useful remedies. It is not a remedy which should be used in large doses; as patients with typhus are certainly more readily affected by its narcotic properties than they are in any other disease; an eighth or a sixth of a grain was the usual dose, and was enough to procure sleep. Opiates are ob-

viously improper when there is much dulness of intellect, attended with great suffusion of the eyes and countenance.

The treatment which was usually pursued by us, may be learned from a study of the remedies already indicated; but as their separate examination tends to break up the connexion of this description, we will state in a few words what treatment we thought preferable under ordinary circumstances. At the beginning local blood-letting will diminish the cephalalgia or other local uneasiness which may chance to exist; general bleeding is to be used only as an occasional treatment: afterwards the patient should be kept upon a mild farinaceous diet, with a little animal broth. The heat of the surface is to be moderated by cool or tepid sponging, preferring a solution of chloride of soda to simple water. The effervescing draught and other mild beverages may be taken as a common drink, more stimulating diaphoretics if the strength of the patient should fail; wine and other stimulants should be given when the prostration is great; and quinine, with a concentrated diet, should be added when the fever subsides, and the skin becomes cool. Emetics, purgatives and blisters were found useful occasional prescriptions, adapted to the removal of particular states of the system, but did not answer our expectations as a general method of treatment.

The mortality amongst the cases which were treated by us from the beginning was not great; but the total loss of patients admitted at advanced periods of the disease, many of whom were moribund, was very considerable, about one in three. The best means of judging is to examine the mortality amongst the officers and servants of the house who happened to be taken with fever while in good or tolerable health. Of these patients two died, making about one in seven. Of the two who died one was paralytic, enfeebled and advanced in years; the other was a young woman in good health, but was affected at the beginning of the epidemic, when the disease was very severe, and our notions of the treatment were not so definite as they afterwards became. The case of this patient is reported in the first part of this article. The mortality is not then great, under favourable circumstances; but is very large when neglect, bad food, crowded apartments, a broken constitution, and above all, a severe form of the epidemic are combined.

The duration of this disease, after it was fully formed, varied from eleven to twenty-eight days. In a few cases it was protracted for a still longer time, but these cases were complicated with an accidental lesion, developed during the course of the fever, and lasting after the latter had completely disappeared. The average duration, exclu-

sive of the cases which terminated in death or in sloughing of the depending parts, or disease of the chest, was nineteen and a half days. About one half the cases terminated at or very near the twentieth day, (from 19th to 21st inclusive.) In the cases which lasted less than the average time, most of the patients were below the age of twenty years, so that youth not only diminishes the danger of typhus but shortens its duration. After twenty the duration of the disease did not seem to depend upon the age of the patient.

The duration of the cases which entered at an early period of the disease was less than that of those admitted after the first week. Whether the longer duration of the latter cases depended upon the want of care and previous bad treatment, or whether the cases admitted at the later periods of the fever were selected in consequence of their not recovering so rapidly as other patients, cannot be rigorously demonstrated. We believe much of the difference arose from the absence of medical attention and the necessary comforts of life, as many of these protracted cases were evidently slight, but they were nevertheless prolonged beyond the average duration.

The general conclusions with the respect to the power of treatment, are, that though it cannot cut short the petechial typhus after the disease is formed, it may shorten the duration, diminish the mortality, and mitigate the severity of the symptoms.

NOTE. We omitted mentioning in its proper place, that suppuration of the lymphatic glands was very rare—not exceeding one in a hundred cases.

ART. II. *An Experimental Examination into the opinions of Sir Charles Bell relative to the anatomical and physiological characters of the Spinal Marrow.* By HENRY H. SMITH, M. D., resident physician in the Pennsylvania Hospital.

Considering the great prevalence of neuralgic affections at the present day, and the importance of the spinal marrow to the general economy, it is a matter of surprise that its functions, character, and physical relations should have attracted so small a share of the attention of physiologists. Intimately connected with the brain, and sending large and important nerves to a great portion of the human body, its action ought most undoubtedly to be thoroughly understood, not only by the physiologist, but also by every one who attempts the cure of nervous diseases.

But though it thus merits attentive examination, comparatively few experiments have been made in regard to its influence over the animal economy; and these have been so generally considered as proving conclusively the views of the experimenter, that few have either doubted or repeated them. Believing that the experiments of Sir Charles Bell on this subject demanded a closer examination, particularly as many of them seemed to be based on somewhat supposititious grounds, I repeated a number, and especially those made to prove the connexion of the middle column with the function of respiration.

In order to conduct my examination in as impartial a manner as possible, I in each instance pursued the following order: first, to read only the experiment as stated by the author; and second, to repeat it as nearly as possible in the same way; always after the first operation dissecting the portion operated on, so as to make myself sure of its correctness.

As Sir Charles, however, merely mentions the fact of his having made a certain experiment, without stating the manner in which it was performed, I was of course left entirely to my own method of operating; and it is with the view of enabling others to judge of its correctness, that many things have been stated minutely which might otherwise have been omitted.

Commencing with his experiments on the anterior and posterior columns of the spinal marrow, I found, after having repeated them several times in various ways, that they all tended to confirm the opinion which he had expressed of their function.

Passing over, therefore, the detail of these experiments, (which, as they proved nothing new, might not repay the perusal,) let us proceed to examine the grounds on which he has founded his opinion of the existence of a middle column.

In the first place, in speaking of the spinal marrow, he remarks, "that it is divided into three portions, to each of which I ascribe a different function, viz. the anterior for motion, the posterior for sensation, and the middle for respiration; the head of which columns is the medulla oblongata." He then goes on to prove the existence of the anterior and posterior ones, but says *nothing* of the middle column. He neither defines its boundaries nor furnishes any evidence of its existence, unless indeed we receive as such, an assertion of its being there according to his views of the case. Now, to say the least, it is a singular way of proving a case, to say that "it is so according to my views;" particularly when those views are entirely new, and differ widely from those entertained by many others.

To be convinced of the truth of this last remark, let us refer for an

instant to the description of the spinal marrow given by one who is generally admitted to be extremely accurate in his observations, and we shall there find that there is a portion which might constitute a middle column, but that the fissures defining it are indistinct, and also that this portion does not extend the whole length of the spinal cord, but stops short in the upper part of the dorsal vertebræ.*

But the column spoken of by Sir Charles Bell is mentioned in connexion with others which do extend its whole length; and as nothing is said to prove that it differs from them in any respect, we must suppose that its termination is the same as theirs.

Admitting, then, for the sake of argument, that it does, ought we not to find something like a nervous root arising from it? If not, how shall we account for its influence over respiration?

But no one as yet has pretended to see more than *two* roots to a spinal nerve. Indeed Sir Charles himself never could have imagined such to be the case, for one of the reasons which he gives to prove that the fifth of the encephalon corresponds with the spinal nerves, is the fact of its having but two roots.

If, however, we suppose that when he referred to a middle column he meant the one spoken of by Professor Horner, then in what way, it may be asked, are we to account for its control over the abdominal muscles in respiration; since, by this column stopping short, as has been shown, at the upper dorsal vertebræ, no nerves could be sent off so low down as the abdominal muscles, and of course they could not exert any influence on respiration.

If, again, it be said that these muscles are influenced by the anterior or posterior cords, what necessity is there, it may be asked, for the middle column extending even as far as the dorsal vertebræ? Or what occasion is there for any middle portion, if its function is to be performed by other parts?

There certainly is none; and it is believed that demonstration will show that the abdominal and intercostal muscles, as far as they are affected by any nervous power, receive it through the anterior cord and roots. And it is also suggested that the appearance of this middle cord at the upper dorsal vertebræ, is caused by one of those numerous fissures which are seen all over the spinal cord, but which is there rendered more distinct by the enlargement caused by the distribution of the nerves of the axilla.

Without, however, arguing the matter further, I would here refer to a passage in Sir Charles Bell's paper "on the nerves of respiration,"

* Horner's Anatomy.

which must satisfy every one of the looseness of his *anatomical* description and the good reason there is to doubt the correctness of his observations, at least without further proof. In speaking of the middle column, he remarks that—

“From this tract on the side of the medulla oblongata, arise in succession from above downwards, the fourth, portio dura, glosso-pharyngeal, par vagum, nervus ad par vagum accessorius, and, as I imagine, the phrenic and external respiratory nerves.”

But observations made every day show that—

“The patheticus arises from the upper anterior face of the valve of the brain, just below the testes, and is distributed to *the muscles of the eye*.

“That the portio dura arises from the medulla oblongata at the most superior part of the corpus restiforme, where the latter joins the tuber annulare, and is distributed on the muscles and skin of the head.

“That the glosso-pharyngeal arises from the posterior cord of the medulla oblongata, and its general distribution is to the tongue and pharynx.

“That the par vagum arises from the corpus restiforme, just behind or on the borders of the fissure separating it from the corpus olivare, and its distribution is to the organs of respiration and to the stomach.

“That the accessory nerve arises from the posterior fasciculus of the medulla oblongata, and also from the *posterior fasciculus* of the *medulla spinalis*, sometimes as low down as the seventh cervical vertebra.”*

Instead, then, of these nerves arising from the continuation of his middle column, it appears that not one of them has that origin; for the continuation of this column on the medulla oblongata would form the corpora olivaria, (the corpora pyramidalia and corpus restiforme being formed by the anterior and posterior columns,) and from this body ought we therefore to see them arising, while on the contrary they do not do so, but in place of it proceed chiefly from the corpus restiforme!

Following up Sir C. Bell's remarks, we next find that he thinks “it is probable” that the branches of the intercostal and lumbar nerves which influence the intercostal and abdominal muscles in respiration, are derived from a continuation of the same column or slip of medullary matter downwards; and that the nerves called phrenic and external respiratory, though coming out with the cervical nerves, may in all probability take their origin from the same column. Now it has been shown that when the existence of this column has been admitted, it was distinctly stated that it stopped at the upper dorsal vertebra: why, then, Sir Charles should think it probable that it extends downwards, when demonstration showed it did not, is unaccountable. And the probability of the phrenic nerve arising from the same tract, when it

* Horner's Anatomy.

is constantly seen to arise from the anterior fasciculus of the second or third cervical nerves, seems even a more singular idea than the other.

Relinquishing argument altogether, I shall now refer to experiments, (which in reality is the only sure test of the correctness of an opinion,) premising the grounds on which I have gone in performing them; these were,—

1st. That if the middle column influences the respiratory muscles of the trunk and extends the whole length of the spinal marrow, the division of *it* alone, without the injury of the other columns, ought to affect respiration.

2nd. That if it extends only part of the length of the spinal cord, the division of *it* at any point should put an end to the action of the respiratory muscles below that point.

3d. That if the respiratory principle resides in the medulla oblongata, (as proved repeatedly,) and is transmitted to the muscles through the anterior column or roots of the nerves, the division of *them* ought to interrupt the action of all the muscles concerned in moving the chest.

4th. That if the abdominal and intercostal muscles *are* influenced by the middle column, the division of the roots of the second, third or fourth cervical nerves ought not to affect their action, but only destroy that of the diaphragm.

For the proof of these propositions I refer to the following experiments.

Experiment 1st.—A good sized kitten was struck lightly on the head so as to stun it slightly, but without affecting its respiration. The skin was then dissected back, and the muscles removed from the spinous process of the sixth, seventh and eighth dorsal vertebræ. The points of the scissors being then carefully introduced, the processes were removed and the canal opened for about two inches. The cord was now raised upon the forceps, and a thin, flat instrument, somewhat similar to a gum-lancet, introduced on the right side at the lateral fissure, and carried through to the opposite side. The action of the abdominal muscles, as well as the intercostals, were closely watched by a friend during this operation, but no change in their movements was visible. The instruments being withdrawn, was again introduced with its flat side to the sacrum, and pushed through so as to separate for the space of two lines the anterior from the posterior columns, but without having any effect on the muscles of respiration. By this mode of operating the anterior column was of course separated from the posterior, but remained otherwise uninjured; while

at the same time any middle portion must necessarily have been divided. The instrument being removed, the animal continued breathing as readily, apparently, as if unhurt.

Experiment 2nd.—By the same operation the spinal marrow was exposed at the upper dorsal vertebra. The same instrument was in like manner introduced between the columns here and allowed to remain some minutes, but without producing any change in the action of the muscles. The animal becoming faint from loss of blood, the instrument was removed, respiration continuing easy. Death was now instantly caused by the insertion of the knife between the occiput and atlas.

Experiment 3d.—The spinal marrow of another kitten was exposed between the last cervical and first dorsal vertebræ, and immediately divided with the scissors in a transverse direction. This paralysed the lower extremities, but produced no material change in the action of the abdominal muscles, except that their expansion and contraction was not quite so full as before. The change was, however, very slight, but it was very evident here that the abdominal muscles did not act by themselves, but that they were materially influenced by the diaphragm, as they expanded and contracted at the same instant that it ascended and descended. The cord was afterwards divided at the fifth cervical vertebra, but without any very material change, except that it rendered the action of the diaphragm more plain and completely paralysed the intercostal muscles.

Experiment 4th.—The cord was exposed in the spinal canal of another kitten, and divided at the middle dorsal vertebra. In this instance the abdominal muscles were affected in the same manner as in a former experiment, although the effect upon respiration was rather more marked in this instance, as the operation was performed more easily and the animal was allowed to live for a longer time. At the close of some minutes, respiration still continuing nearly natural, life was destroyed by the division of the cord at the first cervical vertebræ.

These experiments were repeated twice on other kittens, and with the same results.

Experiment 5th.—By a transverse incision on the occiput, the skin of a kitten two months old was divided, and then dissected forward to the crown of the head, and backwards to the sixth cervical vertebra. The spinous processes of the three last cervical vertebræ were now very carefully removed with the scissors, and the cord exposed. The roots of the seventh, sixth, and fifth nerves were next cut, when respiration, which before went on naturally, became slightly laboured.

The roots of the three next nerves were then also divided, when the action of the diaphragm ceased entirely, and likewise that of the abdominal and intercostal muscles. The animal, however, did not die instantaneously, but continued gasping for near a minute, when death took place; but previous to this event motion was observed in the extremities and tail, which was increased on touching the cord. Sensation was not tried, as the time was too short between the division of the roots and the death of the animal, but it no doubt remained as well as motion.

Had there been in the spinal cord any middle portion especially devoted to respiration, as Sir Charles supposed, the division of it would have been caused by experiment 1st, as owing to the manner of operating, its division was ensured, while at the same time the other columns would remain uninjured; thus preventing the action of the muscles supplied by them from being interrupted. According, however, to his theory, this division ought to have arrested the action of the respiratory muscles, whilst on the contrary they were not all affected by it!

If, again, we admit that an injury to the upper part of the spine does affect respiration, then we must acknowledge that it does so through the medium of the anterior cord and roots; for experiments third and fourth show that the division of these portions rendered respiration laborious to a slight degree, though it did not stop it entirely.

We are, therefore, I think, justified in believing that there is no distinct middle column devoted to respiration; but that so far as the muscles *are* influenced by nerves below the fifth cervical vertebra, they receive that influence through the anterior roots.

Did not these experiments induce us to believe this, the fourth alone would almost do so, as we there see that the division of the upper cervical nerves not only stopped the action of the diaphragm, but also that of the abdominal and intercostal muscles. That the cessation of motion in these muscles was not caused by injury to the anterior column, is apparent from the motion observed in the hind legs after the operation, as well as from the impossibility of such a mishap occurring from the way in which the operation was performed. From these results I think we must conclude that the diaphragm is the only proper respiratory muscle, and that the abdominal and intercostal ones are only secondary and mechanical in their action. For, as the intestines are placed within a circumscribed cavity, where they could not suffer compression without injury, it follows that if they are pushed down by the diaphragm there must of course be a corresponding expansion of the parietes of the cavity which contains them.

This cavity, however, is formed of inexpandible materials, except in front and at the sides. When, therefore, the diaphragm contracts, the abdominal muscles being the only expandible part of the abdominal cavity, must be forced out, for the reasons before stated; and so also when, owing to the oxygenation of the blood it becomes necessary to contract the chest, the brain perceiving the sensation through the par vagum, &c., must transmit the necessary impression to these muscles by the anterior column and roots of the spinal nerves. The muscles being now stimulated both by the nerves and also by the tendency of all expandible bodies to return to their original condition, contract again, and by forcing up the intestines and bringing together the ribs, aid the diaphragm in its ascent.

A similar action, and one which is also somewhat connected with the process of respiration, is observed every day in labour. In this act it is well known that when delivery is about to take place, the patient first taking a full inspiration, expands the chest, and thus compresses the contents of the abdomen, the abdominal muscles having been previously distended as much as they would admit of by the growth of the foetus. The uterus and intestines now feel the compression, and the former being also stimulated by the stretching of its own fibres by the developement of the child, contracts upon itself, and prevents the foetus from being pressed into a shapeless mass by the diaphragm, and also forces it to present one of its extremities to the superior strait of the pelvis. The uterus being thus fixed by the abdominal muscles in front, is prevented from deviating from the axis of the pelvis, and the descent of the diaphragm is therefore made to bear wholly on the fundus of it; the cervix being unsupported, yields; the contraction of the uterine fibres stretches the orifice, the mouth becomes thin, and the child is forced from above downwards, as from a canal with unyielding parietes, and labour is terminated. That this expulsion is not caused by the contraction of the abdominal muscles, as some have supposed, must, I think, be evident, when the tendency of their contraction is observed.

If, as is said by some, the diaphragm only serves as a *point d'appui* for the contraction of the abdominal muscles, the foetus could not be expelled as it is constantly seen to be; for the contraction of these muscles alone would only compress the uterus in an antero-posterior direction, and of course prevent the expulsion of the child, by forcing it in the wrong direction; while on the contrary the action first spoken of is natural and agreeable to true mechanical principles.

Besides, the terms in daily use in the lying-in room, as well as the

efforts of the patient herself, show the action which really takes place, and which we endeavour to promote by directing the voluntary motions of the woman. We do not, when called to a person in labour, merely tell her when a pain comes on to take a long breath, for that alone would only fix the diaphragm and expand the chest; but we also tell her at the time she does this to *bear down*, in order that the uterus may be compressed in the manner before mentioned. Was the patient only to take a long breath, she might do so without compressing the uterus in the least, simply by breathing so as to elevate the shoulders, in the same way that a person who is injured in the abdomen would naturally do to prevent motion in that part; she therefore both inspires and also bears down.

But this mode of action of the abdominal muscles is denied by some, who believe that they alone compress the uterus. For, say they, if we admit this action in labour, how can we account for the action of the same muscles in defecation; since no one can deny that they contract powerfully in that process. They certainly do so; but the reason of their contraction in that case, and not also in labour, will, I think, be obvious, when we refer to the difference in the shape and contents of the uterus and intestines. In the one case, the uterus is a pyriform body, whose mouth is directly opposite to the fundus, which is again in a direct line with the descent of the diaphragm, and its contents are to be expelled in the same line, or by the fundus advancing to the neck, as seen in cases of inversion.

But the case is entirely different with the intestines. We there have a long narrow tube, doubled many times upon itself, and with a portion suspended, as it were, transversely in the abdomen, immediately under the diaphragm, with the opening depending from the arch thus formed.

Was the diaphragm, then, to perform the same action here that it does in labour, the consequences would be very different from that which is required. For, instead of the contents of the colon being forced out by the descent of the diaphragm, as is the case in labour, the arch of it would be driven down and a curve formed downwards, which would necessarily prevent the passage of foecal matter along it; but by the diaphragm remaining fixed and the abdominal muscles alone contracting, this arch is forced up against the diaphragm, and thereby rendered nearly straight; while at the same time it is compressed from before backwards, so as to force its contents onwards in a manner similar (to use a homely figure, but one which represents the action exactly) to that which is caused by the pressure of the foot on a common garden hose distended with water.

These circumstances, therefore, point out to us clearly the action of these muscles in so many other processes than respiration, but which are yet more or less connected with it, that their action in it alone may be easily seen. And since, to perform these other actions, they must be influenced by muscular nerves, we are, I think, justified in believing that as the actions correspond, so do the causes exciting them, and that therefore the abdominal muscles are influenced in respiration (as far as they are by nerves) by the *anterior* portion of the spinal cord, and that no particular part of the cord is devoted to this action alone.

By this explanation all ideas of there being a respiratory column are considered as erroneous. All the spinal nerves, therefore, below the first, must, I think, be considered as being entirely for sensation and motion, while the only proper respiratory ones must be granted to be those connected with the medulla oblongata, whose destruction puts an end to respiration.

Though thus differing in many parts from the opinions of Sir Charles Bell, yet I must say that I have not done so from any vain wish to obtain eclat for pretended discoveries which future observations may contradict. But there is here nothing but a plain statement of the results of my own observations; and as all of them have been witnessed by others, no hesitation is felt in maintaining their correctness.

Having also mentioned particularly the manner in which the operations were performed, it is now in the power of any who may doubt their results to prove their correctness. Knowing the liability of any one to mistake the effect of certain causes, my object will have been fully attained if, finding myself proved to have been mistaken, attention shall have been called to a subject which is worthy of the consideration of the most skilful experimenter.

ART. III. *Diseased Kidney, with Albuminous Urine.* By T. C. ADAM, of Lenawee County, Michigan.

The attention of the profession was first called to the connexion between a peculiar organic disease of the kidney and a coagulable or albuminous state of the urine, by Dr. Bright, in the first volume of his "Reports of Medical Cases," published in 1827. The result of his experience, as contained in that volume, may be thus stated: When the urine in dropsy is albuminous, and more or less coagula-

ble by heat, the kidneys have been found diseased in structure, the liver being generally but slightly affected. On the other hand, when dropsy has been dependent on disease of the liver, and the kidneys have not been diseased, the urine has not been coagulable. When both liver and kidneys have been structurally diseased, the urine has also coagulated. "I have never yet," says Dr. Bright, "examined the body of a patient dying with dropsy, attended with coagulable urine, in whom some obvious derangement was not discovered in the kidneys." We do not claim for Dr. Bright the merit of having first pointed out the connexion between dropsy and disease of the kidney, although he first indicated the frequency of this connexion; but, we are well assured, that to him is incontestably due the honour of having first established the important fact, that organic disease of the kidney can be detected during life by its connexion with coagulability and low specific gravity of the urine.

Ever since 1828, when we first became acquainted with these results of this very eminent physician's researches, we have been attentive in procuring evidence which might establish or overthrow the stability of this index to a desirable diagnosis. Judging by the infrequency of publication upon this subject, we should be induced to conclude that neither in this country nor in Europe has this valuable discovery in diagnosis secured, among the generality of practitioners, that degree of attention which its importance and frequent applicability would seem to demand. That renal diseases with an albuminous state of the urine are not of uncommon occurrence I am inclined to believe from the fact that Dr. Bright, whose attention has been directed to these complaints for upwards of ten years past, has recently given it as his opinion that not less than 500 persons fall victims to them, in London, during the course of a single year. Moreover, in conversation with medical men upon this subject, I have been told, that they could recollect several cases whose course and history corresponded very closely to the symptoms and progress of these renal diseases, and concerning the seat and nature of which they were, at the time, in no small degree perplexed. From their recollections they have little doubt of these anomalous and puzzling cases having been identical with those now under consideration.

Moved by these considerations, it occurred to us while lately drawing up a report of a case of this kind for the information and satisfaction of the family physician and friends, at a distance from whom the patient died, that the substance of that report might be no unacceptable offering to my brethren; especially, as on searching the annals of medicine, it appeared that so few had claimed their atten-

ion on the subject. We proceed, then, to submit to the profession the principal part of the report alluded to, and of the reflections with which it was accompanied.

When your former patient, D. L. S., first applied to me about the middle of February last, he complained of an occasional inability to speak plainly, arising from a sensation like globus in the throat, and of a feeling of numbness in the left side of the face, which was observed slightly to drag, about the corner of the mouth. This partial paralysis of the face, which depends, in all cases, upon a disordered, debilitated, or morbid condition of the portio dura of the seventh pair of nerves, could not, after strict inquiry, be traced to any of those local causes in which it *generally* originates. No blow or external injury had been received; no gland in the course of the nerve could be discovered to be swelled; there was no suppuration in the ear; and finally, there was no reason to suspect any suppuration or effusion at the basis of the brain from any previous inflammatory condition. Nor had that side of the face been exposed to any current of cold air. In the absence of these—the usual causes of this curious affection—I was left to conjecture upon the agent which was producing the paralytic condition of this nerve. Of all my conjectures, that seemed the most probable which referred the disease of the nerve to some congestive state of the brain in the vicinity of the origin of the nerve, or to some effusion or pressure there. Headache, slight wandering of the mind, sleeplessness, and other minor cerebral affections were the data which determined me to adopt this conjecture. The tendency to low forms of arachnitis in those whose urine contained albumen, as did that of D. L. S., assisted in determining me to this *theory* as to the nature and cause of the facial paralysis. I am no urine-doctor; but a history of his previous complaints, and a sense of the importance of ascertaining the state of this secretion, determined me at this early period of the disease to inquire into the condition of the function of the kidneys. Perhaps it would be better that the majority of practitioners should feel as did Hippocrates. *Per vesicam prodeuntia inspicere oportet, an sint qualia sanis prodeunt.* That a certain set of physicians carried this investigation to a ridiculous extreme, is no good reason why others should run into the opposite extreme, and neglect this method of investigating disease altogether. That the brain was in a state quite liable to take on, or become the subject of, either congestion or effusion, I farther thought probable from the fact, that his constitution, compared with what it had been previous to the attack of hæmaturia and inflammation of the kidneys seven months

previously, was what might be very appropriately called very much 'broken down.' That the brain in such a state should be very nearly in the condition in which it is found in those who die of phthisis, dropsy, and other exhausting diseases, seemed quite probable. In such there is generally effusion and softening. That some morbid condition of the base of the brain, which affected the facial nerve with paralysis, should likewise be the occasion of the peculiar feeling in the throat, by affecting the glosso-pharyngeal and ninth pair at their origin, was the opinion which I adopted, or felt inclined to prefer in explanation of this other symptom. Such was the manner in which I interpreted the symptoms and history of this case—such the views which I adopted concerning the real, intimate or proximate pathological condition, which had come under my care.

You are well aware that we are called upon, in a majority of cases, with inconsiderate and incommoding haste, to give an opinion to the patient and his friends as to the nature of the disease under which he labours, and its probable termination. This part of our duties requires no inconsiderable exercise of judgment and consideration. Before giving any decided opinion, I thought it necessary to subject specimens of the urine to some of the usual tests of the presence of albumen. The unfavourableness of my prognosis was to be regulated, in a great degree, by the quantity of albumen found in the urine. We all know that even healthy urine contains a small proportion of this principle. Cruickshanks found that the precipitate which he procured by adding an infusion of tannin to healthy urine, amounted to $\frac{1}{240}$ th part of the weight of the urine. This will not cause coagulation by heat, which requires a notable impregnation; but it is generally found (though not universally) that a precipitate can be procured from healthy urine by means of a saturated solution of corrosive sublimate. Perhaps it might be found universally in this condition, if the urine were taken about two or three hours after eating. But this by the way. Some, with Dr. Mackintosh, were inclined to smile at Dr. Bright's supposed discovery of the connexion between diseased kidney and coagulable urine, because they found, or *were told*, that they could produce at pleasure this state of the urine by some slight derangement of the digestion—almost certainly by heavy, unfermented bread, dumplings, pastry, and other preparations of flour containing 'shortening,' lard, suet or butter. But in two important points it has been ascertained that this occasional impregnation of the urine with albumen can be distinguished from that arising from diseased kidney. In the first place it is transient, not continuous, and generally disappearing after a few hours, as ascertained by Gregory and

Christison. In the second place, coagulable urine continuously secreted and connected with disease of kidney, has been uniformly found of a very low specific gravity; (1013.18 being the average of Gregory's fifty cases, and 1014 and a fraction being the average of nineteen cases published by Dr. Bright, and determined by Dr. Boslock;) while albuminous urine caused by temporary derangements of the digestion is not attended by any reduction of its usual density. I mention these circumstances chiefly to show you that I was on my guard against any deception in the *data* for the attainment of which I made my examinations of the urine, and which were to serve as the basis of my wished for prognosis. In all my trials I could obtain precipitates (of albumen) by means of muriate of mercury, acetate of lead, nitrate of silver, and other metallic salts. In some of my trials, I could obtain coagulation by heat, (in a spoon over a lamp,) though generally in all trials by heat there was a cloudiness and frothiness. From concentrated urine I could obtain solid albumen by agitation with alcohol. Nitric and muriatic acids were also employed, as Dr. Gregory recommends as a point of some importance, that when it is wished to ascertain the presence of albumen in suspected urine, "one or more other tests should be added to that of heat, in order to guard against a possible source of error." Corrosive sublimate, though the most delicate test of the presence of albumen, is not to be depended on, as it causes in healthy urine a precipitate, exactly similar to that which it causes in the urine of kidney disease. Alcohol, and the above named acids, are not liable to any such objection.

Having thus ascertained that the urine, not only after meals, but continuously, was impregnated with albumen, and having been told that the *appearance* of the urine after cooling had been for months, and ever since our patient had left home, exactly the same as at present, I was furnished with data from which I might, with a high degree of probability, satisfy myself as to the morbid condition of the kidney, and venture upon a pretty decided prognosis, taking into consideration also the tendency to cerebral disease and other symptoms. Accordingly, about the fourth day of my attendance, I gave a very unfavourable prognosis to his friends here, of which Mr. S. advised you in one of his earliest communications to the parents of the patient. For the qualified phrase, 'high degree of probability,' which I have just made use of, I might have substituted the unqualified term, certainty, had I known I could depend on the recent observations of Dr. Osborne of Dublin. According to his investigations in Sir Patrick Dun's Hospital, he has not met with a single instance of urine coagulating in a constant manner, in which post-mortem ex-

amination did not afford proofs of disease of the kidney; "nor on the other hand, an instance of disease being found in the kidney after death, in which, on taking a specimen of the urine in the bladder, it did not coagulate." But this, though the result of a good many observations, may not turn out to be a general law, and I therefore preferred the more moderate assumption. I had no instrument to determine the specific gravity, else I should have made observations as to the characteristic lowness of the gravity of the urine of kidney disease.

The following circumstances were taken into consideration while endeavouring to determine the intimate pathological condition of my patient, and the probable termination of the case. About eighteen months previously to his present illness he had an attack of scarlatina; and seven months before he had an acute attack, with hæmaturia. For several months subsequent to this latter attack he had inclination to pass urine frequently; and during all these seven months he could not recollect that he had perspired. He has had a constant pain in the lumbar region, and has felt so much enfeebled that he could not bear any active exertion. His sleep has been disturbed and unrefreshing; his digestion languid, sometimes uneasy, and latterly there has been occasional vomiting. My early attempts to restore perspiration and to improve the function of digestion were unavailing. I subjoin a few remarks by Dr. Bright, relative to the symptoms and progress of those cases of renal disease which have been the subjects of his observations. When you shall have read them, you may easily imagine the thoughts which must have passed through my mind when bringing them to bear on my case. "A child, or an adult," says Dr. Bright, "is affected with scarlatina, or some other acute disease, or has indulged in the intemperate use of ardent spirits for a series of months or years; he is exposed to some casual cause or habitual source of suppressed perspiration; he finds the secretion of his urine greatly increased, or he discovers that it is tinged with blood; or without having made any such observation, he awakes in the morning with his face swollen, or his ankles puffy, or his hands œdematous; if he happen, in this condition, to fall under the care of a practitioner who suspects the nature of his disease, it is found that already his urine contains a notable quantity of albumen; his pulse is full and hard; his skin dry; he has often headache, and sometimes a sense of weight or pain across the loins. Under treatment more or less active, or sometimes without any treatment, the more obvious and distressing of these symptoms disappear; the swelling, whether casual or constant, is no longer observed, and the urine ceases to evince any admixture of red particles; and according to the degree of importance

which has been attached to these symptoms, they are gradually lost sight of, or are absolutely forgotten. Nevertheless, from time to time, the countenance becomes bloated; the skin is dry; headaches occur with unusual frequency; or the calls to micturition disturb the night's repose. After a time, the healthy colour of the countenance fades; a sense of weakness or pain in the loins increases; headaches, often accompanied by vomiting, add greatly to the general want of comfort; and a sense of lassitude, of weariness, and of depression, gradually steal over the bodily and mental frame. Again the assistance of medicine is sought. If the nature of the disease is suspected, the urine is carefully tested, and found, in almost every trial, to contain albumen, while the quantity of urea is gradually diminishing. If, in the attempt to give relief to the oppression of the system, blood is drawn, it is often buffed, or the serum is milky and opaque, and nice analysis will frequently detect a great deficiency of albumen, and sometimes manifest indications of the presence of urea. If the disease is not suspected, the liver, the stomach, or the brain divide the care of the practitioner, sometimes drawing him away entirely from the more important seat of disease." Had I been unacquainted with the researches of Dr. Bright and his successors upon this subject, I should, most probably, have considered this case as obscure and anomalous; but, like the practitioners last referred to, should have allowed none other than the more important seat of disease to have absorbed my attention.

I inquired very accurately to ascertain the former or the present existence of any dropsical effusion, but could not detect that there existed, or ever had, even puffiness under the eyes, or œdema of the ankles. My impression *then*, was, that some form of dropsical effusion generally coexisted with disease of the kidney. On farther inquiry, I find that this is not a necessary or even a prevailing accompaniment. The following passage, bearing on this point, I found in Dr. Gregory's report.

"The proportion of cases in which dropsical effusion was a prominent symptom is large; but it would be incorrect to draw any conclusion on this point from these cases alone, as in almost the whole of them it was the presence of dropsy which led to the examination of the urine. Out of the whole number, however, that is to say, out of the eighty cases, more or less of dropsical effusion existed in fifty-eight, which is sufficient to prove that although not an essential symptom, dropsy is a very frequent concomitant of this alteration of structure in the kidney."

The pain in the loins of which D. L. S. had made complaint from the time of the acute attack accompanied with hæmaturia, which oc-

curred seven months previously to his last illness, I did not consider as of much value in diagnosis, except so far as it went to confirm more unequivocal marks of disease. Without the other diagnostic symptoms, I should have paid but little attention to this lumbar uneasiness; for in almost all the complaints of women, and in many of those of the other sex, a feeling of weakness, uneasiness, or pain in this region is quite a common occurrence. But, in the language of Dr. Gregory,

“I have now seen so many cases in men as well as in women, in which pain of the loins had formed a very prominent symptom during life, and in which this disease of the kidneys was found after death, that I am inclined to consider it an important diagnostic symptom when taken along with other and more unequivocal signs.”

I have detailed, I hope, with sufficient minuteness, the symptoms which attracted my attention while investigating the nature of the disease and establishing a diagnosis; and I have endeavoured to show that my interpretation of these signs was in accordance with the doctrines of the most competent authorities upon the subject. There can scarcely exist a doubt that the views which I adopted were the true ones. Dr. Bright says that he is “not aware of any disease in which the character is more completely preserved, or in which the symptoms more clearly mark a specific form of malady.”

I shall now sketch an outline of my remedial treatment, and of the course of the disease. The means which I employed were directed to one or more of the following indications. Firstly, to palliate or remove the radical disease in the renal organs; secondly, to obviate the agency of the renal disorder upon the brain and nervous system, and to remove the existing effects of that agency; thirdly, to improve the state of the digestive and nutritive functions generally, and enable the constitution to bear up against the destructive operation of the primitive disease and its consequences. In accordance with these I first of all applied blisters to the nucha and back of the ear on the paralysed side, and subsequently dressed the blisters with an ointment containing a small portion of emetic tartar. This preserved the blistered surface from healing, and kept up a continuous irritation. I next employed mild alterative and laxative medicines to remove sordes and improve the state of the digestive apparatus, of which the chief ingredients were rhubarb, ipecacuanha and aloes. I avoided every form of mercury, because it has been thought by the most competent authorities to accelerate kidney disease, and to be more prejudicial than otherwise. Dr. Bright, upon this subject, says, “In general, it has appeared to me, that those who, in the con-

firmed forms of this renal affection, have abstained from mercury, have broken down more slowly under the disease than those who had taken it to any extent, more particularly if they persisted till its constitutional effects have completely manifested themselves." In the experience of Drs. Gregory and Osborne, mercury has not been found beneficial. For these reasons I abstained from the administration of mercury in any form. Flannel was worn next the skin, a diaphoretic regimen adopted, and as there was great depression of the nervous energy, ammonia was preferred to any other diaphoretic from the materia medica. Under the treatment of which the above formed the principal part, the facial paralysis and difficulty in speaking gradually disappeared, and the headache moderated a little, and was complained of more towards the vertex than in the temporal and frontal regions as formerly. But there could not be said to be any improvement in the state of the stomach and bowels: there was languid action, dark coloured secretions, and the tongue remained very heavily coated. No sensible perspiration could be obtained with all 'appliances' and domestic 'means to boot.' The skin remained dry and unperspirable. Although the paralysis of portio dura was disappearing, yet I could not allow myself to suppose that the brain was undergoing any process of amendment; for the headache was not removed, the nights were becoming more restless, the days spent in a state of torpor and somnolency, and there was deep sighing and many other marks of a typhoid state or of deficiency of nervous energy. The spine was examined, and one spot about the second dorsal vertebra found to be tender on pressure. A few days previously it was observed that the left arm and leg dragged a little, or were lacking in muscular power. The diaphoretics had made no observable change upon the urinary secretion. What was now to be done? The mode in which a fatal result was threatened—"the tendency to death"—seemed to consist chiefly of a low form of cerebral congestion, meningitis, or other morbid process in the encephalon, which might terminate by coma, convulsions or epilepsy. On reference to Dr. Bright's latest observations, we were strengthened in our conviction that it was in this way that the disease was likely to prove fatal. He says, "I have been able to trace the circumstances connected with the conclusion of life in seventy cases, and find that no less than thirty out of these seventy have died of well-marked symptoms of cerebral derangements, noted under the titles of 'apoplexy,' 'coma,' and 'epilepsy.' Eight others have died suddenly." A perusal of cases related by others, as well as those by Dr. Bright, had impressed me, previously to reading this numerical estimate, with the persuasion that a

termination by some head affection was the most common of all the consummations of this disease.

As derivatives from the head, and generally to alleviate any head affection, I kept up irritation by antimonial ointment on the back of the neck, applied a blister farther down the neck, evaporating lotions to the head, and ordered any kind of applications which would keep up the heat of the feet, which were becoming daily more affected with cold. Finding that too much company was allowed to see him, and that it increased his delirium and vigilance during the night, I interdicted it firmly—firmness is not unfrequently necessary. Venesection was suggested; but after consideration of all the pros and cons, my best judgment decided against it. Drs. Bright and Gregory are of opinion that it is chiefly in the commencement of the disease, if ever, that the abstraction of blood is beneficial. In later stages of the disease the countenance is usually pallid, as in this case particularly, from seven months bad health; and the system is daily undergoing the loss of albuminous matter by the kidneys, and on these and other accounts it seemed wise and proper to me to hesitate before venturing “to afford a temporary alleviation, at a still farther expense of the more nutritious and stimulating properties of the blood.” It might have been said with some plausibility, that as the head was painful, delirium was occasionally present, and the senses were becoming less acute, and that a slow inflammatory process was going on. But this might have been answered by stating the deficiency of other marks of an inflammatory condition, particularly of any excitement of the circulation, (the pulse being throughout slow, though full and firm,) or in the words of Dr. Bright, who says that this inflammatory process is greatly to be doubted, “as the symptoms, and many of the appearances after death, admit of a ready solution from the state of debility and anæmia to which the patient is reduced.” Nevertheless I abstracted a few ounces of blood by cupping from the region of the kidneys, and after one or two poultices, applied blisters. The best authorities prefer blisters, setons, or issues, to the abstraction of blood. Camphor and opium, four parts of the former to one of the latter, with a minute portion of ant. tart., seemed to soothe a little and reduce the delirium and sleeplessness of the nights.

The skin, which had been unperspirable for seven months, remained so, notwithstanding a flannel inner dress, blisters, and diaphoretics, internal and external. Unable in this way to relieve the kidneys, the quantity of albumen passing through was on the increase and the urine generally more scanty, my attention was directed to the means of obtaining from diuretics some alteration in their function; avoiding,

if possible, any detrimental excitement. I knew that the majority of the patients of Drs. Bright and Gregory who had recovered from attacks of this disease in some of its various forms, had used diuretics; chiefly supertartrate of potass, squills and digitalis. *A priori*, they appear of doubtful efficacy for good, and latterly Dr. Bright seems to employ them with more hesitation than at first, while Dr. Osborne condemns them. I ventured upon the administration of those above named in small doses, which increased the quantity of the secretion, with some relief to the increasing delirium, stupor and coma. But these latter symptoms made head notwithstanding, and he had almost entirely the appearance of one labouring under typhoid fever. The chances of recovery, small as they were deemed at first, were daily diminishing. For several days before his death he had about every day an attack of a convulsive nature, seemingly from obstruction to inspiration. For the last five or six days of his life there was little to be observed; low muttering delirium or coma filled up the whole history. For two days I had observed the *pomum adami*, or larynx, and upper part of the trachea very prominent, protruding nearly as far as the chin. The evening before he died I could see no observable change; the pulse was full and strong, and in this consisted the principal difference between my patient's symptoms and those of typhoid fever. In the latter part of the evening his breathing became more laborious, and shortly after midnight the painful history of his disease was closed.

Circumstances prevented my intended post-mortem examination, so that, to my regret, I am unable to subjoin a description of those morbid changes in the kidneys, and perhaps brain, of the existence of which there can be little doubt.

From the first complaint of difficulty of speaking and numbness of the cheek till the day of his death, there intervened about thirty days.

Clinton, Michigan, March 16, 1837.

ART. IV. *Case of Deformity of the Mouth, from a Burn, successfully treated by Dieffenbach's method.* By T. D. MUTTER, M. D., Lecturer on Surgery. [With a Plate.]

The following interesting case came under my charge the latter part of November, 1836. The individual affected was the daughter of a highly respectable practitioner of medicine residing in South

Carolina, and at the time the accident productive of the deformity occurred, about 11 years of age. Her general health has always been perfect, though her temperament is a strongly marked lymphatic.

In the commencement of the winter of 1835, while at play with her companions, she was by some means or other thrust against a heated stove, by which her hands, arms, neck, and the lower part of her face, were severely burned.

Her wounds were treated in a most judicious manner by her father; but, in spite of all his efforts, those about the mouth cicatrized with so much contraction, that the entrance into this cavity was almost obliterated. As soon as the tenderness of the part was somewhat diminished, he commenced a treatment calculated to restore this orifice to its natural size. He first began by introducing sponge tents, which were allowed fully to distend themselves; but, after repeated attempts with them, by which he caused the child much suffering, without materially benefitting her, they were abandoned.

He then attempted to dilate it, by first making an incision of about six lines in length, extending from each angle of the mouth, in an outward and nearly horizontal direction, and afterwards introducing the tents to prevent the lips of the wounds from uniting. This appeared at first to be productive of some good, but in a short time they cicatrized and contracted, and the patient remained in as uncomfortable a condition as before.

Finding himself foiled in both attempts, he determined to visit Philadelphia for the purpose of consultation. She was accordingly brought on, and became a patient of mine. When I first saw her nearly a year had elapsed since the occurrence of the accident. Her appearance at this time was very singular. Firm and dense cicatrices nearly surrounded the mouth, but were most marked on the lower lip, and about the angles; while the orifice of this cavity was barely large enough to admit the point of the finger, and presented an oval form. The cicatrices of the incisions made by her father, were also very apparent at each angle. (See *fig. 1.*) Her general health was perfect, and it was only on account of the deformity and difficulty of taking food that the operation was requested. Her speech was not much affected, although some of the labial sounds were imperfectly pronounced. The lining membrane of the mouth was perfectly normal.

From the history of the case I concluded at once that it would be utterly useless to attempt a cure by the repetition of the measures already employed, and which are the ones usually had recourse to. I therefore proposed the operation recently devised for such cases by

he celebrated Dieffenbach, and her father consenting it was accordingly performed on the 28th of November, 1836.

The patient was seated in a low chair, with her head supported by her father, and exposed to a good light. Following the directions of Dieffenbach, I then introduced the extremity of the fore finger of my left hand into the mouth, and placed it under the left labial angle, which, by this means, was rendered prominent and sufficiently firm to permit the second step of the operation to be readily executed.

This is accomplished by the introduction of one blade of a pair of narrow, straight scissors into the substance of the cheek, between the mucous membrane and the other tissues, and a little above the commissure. The blade is then slowly pushed from before backwards, separating as it passes along the mucous membrane from the muscles and integuments until its point reaches the spot at which we wish to locate the new angle of the lips; the blades are then closed, and the parts included between them cut squarely and smoothly at a single stroke. The first incision being completed, the scissors were withdrawn, and a second one, parallel and similar to the first, made in the lower lip; the distance between the two being about three lines. These incisions were then united at their posterior termination by a small crescentic section.

By these cuts it is evident that a small strip of muscle and integument was insulated from the surrounding parts, and it only remained to separate it from the buccal mucous membrane, which was easily done by a single stroke of the scissors.

The second step of the operation being thus finished on the left side, similar incisions were performed on the right.

Looking at the lines traced out in *fig. 1*, which shew the course of the incisions on each side, it will be seen that two wounds, each about three lines wide and six long, the floors of which were formed by the mucous membrane of the mouth, had been made. The next steps of the operation, and by far the most difficult of the whole, were the division into equal portions of the mucous membranes, the eversion of the flaps, and their attachment to the edges of the incisions just made, as well as to the red pellicle of each margin of the lips.

To divide the membrane equally I separated the jaws of the child as much as possible, by which measure the former was put upon the stretch, and kept sufficiently firm to bear the operation of the scissors. The incisions in the membrane did not extend so far as those made in the muscles and skin, but stopped about three lines from the union of the latter. This was done in order to make the outer portion of this tissue adapt itself accurately to the new commissure. The

flaps were then brought out, reflected over the margins of the wounds and firmly attached to them by means of the twisted suture, the needles used being very short and fine. (It should be recollected that the membrane must be first attached to the commissure, by which measure we secure the proper adaptation of the flaps to the other parts.)

Every thing having been properly adjusted, a common roller bandage was applied, as in cases of fracture of the lower jaw, in order to prevent any derangement of the wounds. The patient was then placed in bed with her head elevated, and as she had just before the operation eaten freely of some light food, ordered to take no nourishment of any kind until the next visit, and to be perfectly silent.

Nov. 29th. Passed a good night; slept well; no fever; and complains of no pain; parts merely a little sore; needles all in place; writes that she is hungry. Ordered thin oat meal gruel as diet, which, as well as her drink, is to be given with a small teaspoon.

30th. Quite as well as yesterday; every thing in place; bowels costive. Ordered an injection of white soap and water; diet as before.

31st. Complains of stiffness in the wounds, but no pain; dressings all secure; injection had operated well; pulse natural. Ordered chicken soup for diet.

Dec. 1st. The bandage was removed and the first dressing commenced. The sutures which had been closely bound down to the parts by blood, were carefully softened with warm water and cut away. As soon as they were removed, and the parts properly dried, the most gratifying exhibition of the success of the operation was afforded. On both sides union between the reverted mucous membrane and the margins of the wounds had taken place nearly throughout, and the *new lips* presented an appearance almost natural. Some of the needles were then removed, but as there appeared to be a feebleness in the adhesion at some points, the needles passing through them were allowed to remain, and a thread cast loosely around them. The bandage around the head was also reapplied.

2nd. Second dressing, parts all firm and healthy; the remaining needles were now removed, and the bandage only reapplied, which was done to prevent talking; no pain in the part, and the patient in fine spirits. Ordered bowels to be opened with an injection, and the diet to be more nutritious, but still liquid.

Nothing remarkable occurred in the subsequent treatment. All dressings were taken off on the 15th inst., and the child allowed to pursue her ordinary course of life. The mouth presented a very good appearance, though the lips were somewhat thinner than natural,

and there was some difficulty in bringing them into close contact, especially at the central portions. I have no doubt, however, but that this defect will soon disappear. (*Fig. 2*, represents her eight weeks after the operation.)

Remarks. The annals of modern surgery hardly afford an example of more ingenuity than is exhibited in the design of the operation just detailed. Dieffenbach, whose fame as a rhinoplastic surgeon is just beginning to be appreciated in this country, and whose skill and success fully justify the eulogiums which are now bestowed upon him, having been foiled in several attempts made to relieve cases similar to the above, at last hit upon the beautiful expedient illustrated by the operation. The great difficulty in all such cases arises from the constant tendency to contraction manifested by the cicatrice, which occasionally goes on to such an extent that the orifice of the mouth is almost closed. At the first examination of such a deformity, the remedy which seems to promise most success, is mechanical dilatation. Unfortunately this is productive of but temporary relief, and has never, I believe, effected a permanent cure. Next to this method comes incision of the commissures. We might naturally expect such a course to be sufficient to effect the end desired, and in all probability this would be the case could we by any means prevent reunion of the edges of our incisions. But this, it would appear from the statements of the best authorities, has hitherto been impossible; for, notwithstanding the introduction of tents, leaves of sheet lead, cerate cloths, &c. between the lips of the wounds, their adhesion, more or less complete, is sure to take place.

The primary indications in the treatment of such cases then are, 1st. the division of the commissures; and 2nd, the application of some measure by which the margins of the incisions may be made to cicatrize separately. Aware of the difficulties attendant upon the fulfilment of these indications, it occurred to Dieffenbach that if we could cover these margins with a tissue which would not readily unite with itself, that a cure would be accomplished. He accordingly performed the operation which I have just described, and his success was such as to lead to his repetition of it in several cases, in all of which the most happy results were obtained. There can be no doubt relative to the value of this new process, as it is applicable to almost every case of contraction of the natural openings, either congenital or acquired. It is moreover safe, and but slightly painful. The whole operation when performed on the mouth may be accomplished in ten or fifteen minutes, and there is little or no hæmorrhage to be apprehended, for the branches of the coronary arteries which are divided

are so small that they contract of their own accord, and do not require the ligature.

There is one case, however, in which it would not in all probability succeed, viz. when the buccal mucous membrane itself participates in the lesion. But this complication must be of very rare occurrence, as the injury in almost every instance is confined to the outer surface of the surrounding parts. In conclusion, I may remark, that although this is the only case that has come under my immediate observation, the success attending the operation has been such as to lead me to recommend its performance in every instance in which the mucous membrane surrounding the orifice is in a sound condition.

Philadelphia, May, 1837.

ART. V. *Glanders in a Youth.* By J. WIGGINS HEUSTIS, M. D., of Alabama.

Mr. Y——, a butcher, of Mobile, requested me to visit his son, a youth about twelve years of age, who had been sick for ten months, and had been under the care of different physicians at sundry times, but without receiving any benefit. The prevailing belief appeared to be that the disease was mercurial, as at the commencement of his illness he had taken a large dose of calomel, which, although it had operated freely, was supposed to have left its effects upon the system, in the form of ulcerations and rheumatic affections. In fact, the disease appeared to be anomalous and unique. The complaint, for the most part, had been confined to the limbs, but within a few days of the time I saw him it had attacked one side of the face, involving the cheek, eye, and upper lip, which were much tumefied, smooth and shining; the swelling closing the eye of the affected side, and sundry livid and ash-coloured warts or tubercles were seated about the eye and upon the side of the superior portion of the nose. Some of these were denuded of their cuticle, and exuded an ill-conditioned ichorous serosity. The upper lip was much swollen, with a blackish excoriated streak extending from the nostril; the inner and inferior portion of the lip appeared livid, and upon the verge of mortification. There was considerable febrile excitement, hot skin, frequent and tense pulse, and generally considerable thirst. Latterly the febrile symptoms had become more aggravated than formerly, although the appetite had been but little impaired. Previously

the disease attacking the face, the appetite had remained good, except at those times when the pains and inflammations commenced fresh attacks upon any parts of the body, at which times there occurred an aggravation of the febrile symptoms and disinclination for food.

I had previously seen the glanders and farcy in the quadruped race, and had read of its occurrence in the human family; and nearly my first inquiry upon considering the case was, whether they had ever owned any glandered horses. The mother replied that they had had four affected with the disease; three of them at the time of my visit, and that the first had died ten months previously, about the time that her son became diseased; that he was very fond of horses, and paid much attention to them; that the first one which died he took off, and assisted in opening and dissecting it; that for a day or two afterwards he was affected with great sickness of the stomach and disgust for food; that immediately after this a painful swelling appeared upon one of his fingers, which, however, never suppurated; that a similar affection next attacked the shoulder, then the knees and ankles, which latter places were frequently the seats of successive suppurations. The disease also affected his side, when it was supposed to be a pleurisy, and for which he was bled, but without relief: the matter from the suppurating parts was at first like that of a common bile, but soon became thin, yellow and watery, and mixed with blood; the disease thus successively invading different portions of the body; that when any part of the body first became affected it was extremely painful and tender to the touch, extorting cries and exclamations of distress from the sufferer; but that as the part became puffy and swollen the pain subsided in that part, and one or more places became affected in the same way and pursued the same course.

At the time I saw him, which was on the 30th of September, he was much emaciated, his feet swollen, tender and painful, and his hands similarly diseased, with the exception of the puffy swelling; the back of one of the hands, however, was red, swollen and painful. He was affected with a cough and the expectoration of purulent matter, which had existed anterior to the commencement of the other affection, and did not appear to form a necessary part of it. The sister was also affected with the same phthisical disorder of the lungs, but continued active and otherwise healthy.

I looked upon the disease as so utterly hopeless and incurable, that I merely prescribed a little cooling and anodyne medicine; stating to the parents the nature of the complaint, which was the first intimation they had ever received that the disease was *glanders*, in which belief they now fully concurred.

Oct. 2nd. Wishing to observe the progress of this disease, I again visited the patient to-day. The swelling of the face had increased and extended to the opposite side; the other eye was now also nearly closed by the progress of the tumefaction; a swollen ridge extended from the summit of the nose diagonally to the hairy scalp. The leaden or ash-coloured tubercles of the skin had increased in size and number; about these tubercles the skin was of rather a dark and purple hue; the face generally was pale, smooth, and shining; the upper lip was more tumid and livid, the excoriated surface nearly black, and covered with a bloody serosity. Livid discolorations had also taken place in some of the swollen fingers, and the right elbow was likewise purple and livid, and studded with similar eminences or tubercles as those upon the nose and face. The limbs were extremely tender, and touching or moving them gave the patient great pain. The brain was evidently considerably affected, the intellect impaired, and consciousness yielding to the progress of the disease. Occasionally he would start from his drowsy slumber with a scream of ineffable distress. His pulse was more feeble and frequent; febrile heat unmitigated; breathing shorter and more laborious, attended with a rattling in the throat; decubitus dorsal; lower extremities drawn up towards the abdomen, with inability to extend them, probably from the pain.

Oct. 3d. He died before day this morning. The body was not examined post-mortem; and could even the consent of the parents have been obtained, the operation would have been dangerous in the extreme.

The probability is, that the glanders is not communicable from the horse to the human family, except by inoculation. Upon this point, however, more extensive observation is required. We know that it is communicated among horses by permitting the sound to associate with the diseased; but whether by the breath or by eating in the same manger, and thus receiving the infectious saliva into the stomach, or by the contact of the morbid matter itself with the skin, are questions not so easily determined.

In the case under consideration it was remarked above, that immediately after the operation of opening the dead horse the lad was affected with nausea, which continued for a day or two; and that in a short time a swelling appeared upon one of the fingers. The bronchi at that time were in a state of chronic inflammation, with the daily expectoration of purulent matter; it is possible, therefore, that the strong exhalation from the cavity of the horse, impregnated with the morbid and specific matters of the disease, by coming in contact with

the irritable lining of the air cells, might, in this way, have found admission into the circulating system. A more probable presumption is, however, that in his rough and awkward dissection the lad scratched his finger with the knife—a fact confirmed by the statement of the father, although it had escaped the notice or recollection of the patient. However this may be, the character of the disease, and the circumstances connected with its origin, leave no doubt in my mind respecting its identity.

That this disease is so seldom remarked as occurring in the human subject, is not, probably, owing to its non-existence, but to its not being recognised. How often does it not happen that diseases of ordinary occurrence are mistaken and confounded? Thus I have known pregnancy mistaken for dropsy; the accumulation of fæces in the colon for enlargement of the spleen; colic for hepatitis; chronic hepatitis for rheumatism; scarlatina for common synocha; hydrothorax for dyspepsia; and the suppressed cough of pleurisy for hiccough, and treated with ether and laudanum, when the man was dying with inflammation.

The consideration of this case presents several points of resemblance to those produced by the absorption of putrid and other animal poisons, arising from the application of such matters to ulcers and excoriations of the body, or to wounds in dissection; with this addition, that in the case under consideration there was present a specific virus, contaminating the system, but unlike many morbid poisons, observing no crisis, having no tendency to terminate in convalescence, and whose only issue is death. It also bears considerable resemblance to the *malignant pustule*, so well described by Dr. Pennock in the number of this Journal for November, 1836. Something like this may also be observed in certain cases of scarlatina; when, as might be reasonably supposed, the danger had passed and convalescence was established, the morbid poison appears to take fresh hold upon the system; indolent and malignant swellings appear about the throat and jaws; the nostrils are excoriated and distil an ichorous sanies, corroding the parts with which it comes in contact, and every opening and orifice of the body becomes a loathsome mass of disease. It is rare, under such circumstances, that a second and favourable crisis takes place, but the patient sinks, worn out and exhausted.

So far as my information extends, the foregoing is almost the only case of glanders occurring in the human subject that has been recorded on this side of the Atlantic. A notice of a few cases in Europe may be found in the periodicals, and in preceding numbers of this Journal; another is also noticed in one of the numbers of the New York Medical and Physical Journal. Similar instances may have been observed

by other American physicians; if so, they should be communicated for the benefit of the medical profession, and perhaps for the cause of humanity. It is at the same time more than probable that the disease has in many instances been communicated, and even proceeded to a fatal termination, without its character ever having been suspected. The disease is not an ordinary one, incidental to the human family, nor does it fall within the regular study of the medical profession; and it is possible that comparatively few physicians have ever observed the disease even in the brute creation. In the case above mentioned, the nature of the disease had never been suspected until after a lapse of ten months from the period of its commencement. And it is very possible that it might have passed unrecognised by the writer of this article had he seen it at an earlier stage, whilst as yet it was confined to the limbs and extremities, where it might have been mistaken for mercurial rheumatism or some anomalous disorder.

The fact of its being communicable to the human system entitles it to a place in our nosologies, text books, and practical systems; and I hope that the editor of the American Cyclopaedia of Practical Medicine and Surgery, will give it a place in his valuable work, and bestow upon it that consideration which its terrific, loathsome, and fatal character demands. As yet it is considered as one of the absolutely incurables, whether in the brute or human race. It is possible, however, that talent and skill may hereafter be directed to some remedy or mode of treatment that shall disarm it of its terrors and triumph over its fatality.

Mobile, May, 1837.

ART. VI. *Reports of Cases of Insanity, treated at Friends' Asylum, near Frankford.* By R. R. PORTER, M. D., Resident Physician.

Mind has been regarded as a distinct faculty, endowed with capacities for entering into different states, without involving correspondent changes in the nervous system. The advocates of this doctrine, among whom may be placed nearly all those who have written on mental philosophy, admit that there is a general and mysterious connexion between mind and matter, but suppose that the operations of the former are independent of the latter. On the contrary, the adherents of the phrenological system, together with others who have investigated the phenomena of mind, contend that all its powers and varia-

ions are determined by the condition or modification of separate portions of cerebral structure, and that the union between the two is so intimately and reciprocally compacted as to render it impossible to affect one, without the other undergoing a like and simultaneous change. This doctrine of the dependency of thought on organization, was maintained by many physiologists, long before the days of Haller, who believed the brain to be the seat of intelligence, yet supposed its special powers could never be located, owing to the intricate nature of the nervous system. Of late, the principle that the brain is the exclusive instrument of intellect and feeling, has attracted much attention among physiologists and anatomists; and believing it to be supported by reason and observation, we shall briefly state some of the arguments adduced in its favour. We are more anxious to do so, as it is not uncommon to hear physicians speak of insanity as purely a mental affection; and, in consequence of this view of the subject, regard the employment of physical agents in its treatment either as hazardous or useless. In more than one instance we have been requested by medical men, strongly imbued with the notion of the distinctness of mind and matter, to withhold the applications of medicinal means in the treatment of their insane relations, because it was supposed they would only occasion pain and torment, without a prospect of doing good. Further, a manager of a celebrated lunatic institution, lately informed me, that several years ago he and his colleagues were so prejudiced against the use of medical measures, as to object even to the election of physicians in their board, being fearful they might effect some innovation. At present, both medical and moral means are used; and the increased number of cures being nearly fifty per cent. more than formerly, fully proves the danger of regarding insanity in the light of a mental affection, requiring only moral treatment: therefore we proceed to show the intimate union between intelligence and organization. If the thinking and feeling principles acted independently of matter, they should not be suspended by the abstraction of stimuli from the brain, as happens during sleep and swooning: in the latter, the offices of the brain are interrupted by the equability of the circulation being suddenly disturbed; and are resumed only when the inequality is restored. It may also be added, that the effects which occur in the brain, take place in other parts of the body, whose functions, likewise, are suspended by the same influence.

Certain diseases of the brain, such as inflammation of its substance, apoplexy, and palsy, act as immediately upon the mental faculties, as do gastritis, pneumonia, and hepatitis, upon the functions of the stomach, lungs, and liver; why, therefore, not say with equal propriety, that to the brain belong the powers of understanding and

judgment; that indigestion and dyspnœa are referred to their respective organs? Analogy further shows, that in this life, mind displays its forces by means of corporeal organs, inasmuch as all the senses of vision, smelling, tasting, and hearing, require an organic apparatus for their respective manifestations; and the results of comparative anatomy, when fairly examined, tend to establish the same opinion; they prove that intelligence and propensity are proportionate to the size of the cerebral organs; and when in any animal new distinct portions of brain have been discovered, observation in numerous instances has shown they originated separate and distinct powers or affections.

Again, there are no instances where the integrity of thought was preserved on the destruction of the brain. Mechanical injuries of its substance, of a limited nature, frequently, if not invariably, affect the health of one or more of its functions. The power of pressure on an exposed surface of dura mater to suspend consciousness, is well known; in many cases of congenital idiocy, the cerebral structure is but partially developed, and the displays of intelligence and sentiment are also limited; hence writers on insanity often describe idiots remarkable for religious feeling, for mechanical talent, and musical powers; while in those instances where the brain is very much below the usual size, there is almost an entire absence of reason, sentiment and desire. All of these phenomena accord with the doctrine of the brain being the instrument of the mental powers, and militate strongly against the supposition that mind and matter are distinct entities, as taught either directly or indirectly by metaphysicians; neither by it can be explained the effects of alcohol, of narcotics, and of local abstractions of blood from the brain, which sometimes almost instantaneously calm the most furious maniac.

The mental phenomena attendant on childhood, their deterioration in old age, the successive expansion of the brain, and the destruction of particular mental powers by certain lesions of the cerebral mass, are at variance with the notion of mind operating separately from organization. If the mind operates separately from organization, its exhibitions should be as perfect during infancy as in mature years, and should remain as active when the body is tottering with old age as they were in the vigour of its health, but daily observation declares to the contrary. The facility with which knowledge is acquired bears uniformly an exact relation to the size, structure and healthiness of the brain. In childhood the mental capacities are weak and limited, the mind cannot grasp forcibly at truth, it seems only adapted to the reception of facts; but as the cerebral organs enlarge, and acquire consistency, the faculties of judgment and reason are expanded, and

are enabled to collate into useful and stupendous systems of knowledge the important truths collected in former days; but as life declines, the nervous, like the osseous, vascular, and muscular systems, loses pliancy and vigour, while its functions with theirs become deteriorated. We repeat that the progressive developement of the mental phenomena, their enervation by disease, and decrepitude, and the characters of idiocy, afford strong arguments in favour of the truth of the proposition we have been advocating; for none will deny that the manifestations of understanding, feeling, and desire, correspond to the growth of cerebral matter, and that they undergo peculiar changes in the decline of life.

I shall now go on to illustrate by cases some of the diseases of the brain, giving rise to the different forms of insanity, beginning with mania.

CASE I. *Mania, preceded by partial insanity, cured by local depletion.*—J. H. æt. 18, a farmer, of New Jersey, was admitted on the 17th of March, 1835. The certificate states the duration of the case to be ten months, and that it supervened immediately on an attack of influenza, attended with sore throat and great pain in the head. On the 8th of May* he was suddenly seized with a paroxysm of mania, and soon became so violent that it was difficult to restrain him from injuring himself and others.

9, P. M. *Physical state.* Muscles flabby, large; eyes gray; hair brown; stature tall; complexion fair; motion quick; tongue moist; countenance wild, daring; face pale; pupils dilated, fixed; no abdominal tenderness; refuses food and drinks; snaps at every thing carried near the mouth; pulse small, round, cannot be numbered owing to muscular agitation; respiration hurried; heart's motion quick, rapid, tumultuous; makes great efforts to free himself of restraint.

Mental phenomena. Thoughts incoherent, irrational; remarks obscene, insolent, profane, vindictive, uttered in a loud and boisterous tone; alternately cries, ejaculates short sentences, swears, laughs, sings and raves furiously. Attention cannot be fixed; abuses all around him. Ordered $\frac{3}{4}$ xi. of blood taken from occiput; directly after the operation he became calm, rational, and declared the head was relieved of pain and pressure; begged the abstraction of more blood. Room darkened; cold cloths applied to the shorn scalp; patient kept in the tranquillizing chair; diet farinaceous.

* Previous to this period I had not commenced my notes on the case, having entered the asylum as resident physician only two days before. The aspects of the case, I understand, have altered little or none since his admission.

11th. Since the 8th has been calm, but dull and unwilling to converse. This morning heat of scalp augmented; sensibility of pupils dull; tongue coated with whitish fur, moist; constipation; pulse 69, full, strong; obedient, grave, fearful of some impending evil; conversation rational; consciousness of late events indistinct. Cupped ζ vi.; give ol. ricini ζ ss.

14th. Last night pulse was 82; mind confused; memory of persons and of transactions more impaired. Was cupped ζ vii.; blisters were put on the ankles. 10 A. M. heat of scalp increased; countenance wild; no pain in head; face alternately flushed and pale; appetite moderate; pupils contracted; bowels confined; pulse 70. At times he screams loudly for a few minutes, but soon controls his passion; wanders in speech; ignorant of his situation; recollections of the past very turbid. Cupped ζ x.; scalp covered with ice; give ol. ricini ζ ss. Blisters dressed with savin cerate.

16th. At the dawn of day was found dashing himself against the walls of his room, and covered with blood. 8 A. M. sensibility much diminished; muscular strength rather increased; scalp hot; pulsations of temporal and radial arteries small, weak, rapid, 127; heart's motion tumultuous; countenance ferocious; pupils nearly natural; tongue coated with yellowish fur; skin of body moist; face flushed at intervals; squinting; no strabismus; conjunctiva injected minutely; muscles of face in constant motion; indifferent to sounds; features mobile; eyes shiny; respiration easy; deglutition easy; no abdominal tenderness; bowels moved yesterday; under constant muscular agitation; eats ice with avidity; refuses food. Every act and expression highly extravagant; heedless, or unconscious of surrounding circumstances; regards his attendants as enemies, and invokes terrible imprecations on them; swears; bites; distorts every part of the body in anger; vociferates disconnectedly to the extent of his voice. Cupped ζ ix.; soon after the pupils were dilated; face pale; mind tranquil; body less agitated and confusion of intellectual faculties much diminished. Directed all restraint taken off, and the patient put to bed. *Evening.* He had at noon another furious paroxysm, which continued three hours; exhaustion followed, when the face was pale, death-like; pulse wiry; body covered with cold perspiration; muscular strength reduced; with difficulty maintained an erect posture; voice low, feeble. Ordered him put to bed, and to take egg and milk beaten up together.

17th. Slept part of the night; heat of scalp normal; eye lids red; face pale; features wan; appetite bad; eyeballs restless, squinting; muscles quiet; pupils natural; pulse 104; tongue red at edges; bowels moved; complains of weakness. Mind composed; no recollec-

on of yesterday's events; listless in conversation. Blisters dressed with savin cerate; diet, animal soup, milk and eggs.

20th. Improving; has slept soundly for several nights; countenance dull; no cephalalgia; heat of scalp normal; pupils contracted; face pale; squinting continues; stronger; skin of body moist, oily; appetite better; bowels regular, stools yellow, consistence good; pulse 36; tongue moist, clean; converses reluctantly; filial feeling suspended; has no desires; performs every thing mechanically. Knows not where he is, or why brought here. Blisters kept discharging.

22nd. No pain in the head; sleeps well at night; temperature of body uniform; countenance dull; pupils rather contracted; tongue furred; respiration pure, chest anteriorly resonant on percussion; pulse 70; indifferent about food; muscular movements slow and hesitating. At times is obstinate; easily excited to anger and resistance. Saw his parents, seemed pleased; manifested no interest about domestic concerns; had no desire to return home. Give ol. ricini $\frac{3}{4}$ ss.

27th. Was kept awake last night by pain in the head; pupils contracted; heat of scalp augmented in front; countenance grave; tongue pointed, red at the edges, moist; face pale; heat of body natural; pulse small, weak, 64. Some epigastric tenderness on pressure; bowels regular; appetite improving; mental powers still dull; unable to recall the names of attendants; indifferent about time, place, and circumstances; never smiles, or speaks of his own accord; questions are answered slowly, and in monosyllables. Cupped over abdomen; rides and walks out daily; blisters are healed.

June 9th. He has his natural sleep; pupils normal; scalp pleasantly warm; skin of body perspirable; tongue clean; countenance sedate; pulse 60, full, strong; bowels regular; slow in speech and muscular movements. Perception of recent events more acute than his conception of past ones. While riding out to-day he made several voluntary remarks about the scenery, prospects of the crops, &c. when his countenance became lively and cheerful for the first time since his illness. Diet full.

27th. For more than two weeks has been engaged in various duties on the farm; works industriously and eats heartily; still there is a gravity about him, an air of surprise when spoken to, an hesitancy in answering questions, which lead us to fear his convalescence is not perfect.

July 16th. Discharged, well.*

* The father of this patient thought insanity was a mental affection, and as such, beyond the control of medicine; he, therefore, had resolved to build a small hut, on a corner of his place, and there confine his son, by "chain and ball," till death

Remarks. Mania, when fully confirmed, is generally supposed to be permanent and continuous for days, weeks, and even months, and finally, if neither restoration nor dementia ensue, to run into chronic mania; but such forms of the disease must be comparatively rare, as we have never met with a solitary instance of the kind. The case which has been, and those to be detailed, assumed evidently a paroxysmal form, and were accompanied with well marked intermissions, of longer or shorter duration; during these, however, the brain continued in an excitable state, which prevented the mind from recovering its wonted clearness and composure. It will be observed that the paroxysms in this case were fewer than in the second case, and of shorter duration than in the third case, while in the fourth case the paroxysmal character was lost on the supervention of fever.

The maniacal fits were all attended with symptoms indicative of greater or less determination of blood to the brain: such as heat of scalp, pain in the head, coldness of the extremities, rolling of the eyeballs, injection of the conjunctiva, flushed face, beating of the carotids, increased frequency in the pulsations of the heart, of the temporal and radial arteries, which pointed out the propriety of local depletion, of the application of cold to the scalp, and of heat and rubefacients to the lower extremities. By these means the violence of the paroxysms was uniformly diminished, and their recurrence was prevented by taking blood from the scalp during the intermissions.

CASE II. *Mania; duration three days; not constitutional; supervening on, and alternating with, partial insanity; followed by fever; cured.*—Mr. S——, a Friend, of Philadelphia, by trade a mason; entered on the 23d of May, 1836. During childhood much given to masturbation; general health good; business habits active; disposition kind, filial; mental capacities ordinary. His friends date the origin of the disease from the period of its violence; though for several months they say he has been less ardent in the pursuit of wealth than formerly; more grave in character; has also shown an unusual concern about his bodily health, and was often seized with a dread of dying, while apparently in good health. In the spring of 1835, having made, as he supposed, ample arrangements for meeting all his indebtedness, he undertook the erection of a house; at first his liabilities were promptly met, but unexpected difficulties were encountered in adjusting the second or third instalment, at which he was so much worried and perplexed, as to doubt the propriety of the under-

should relieve the unhappy sufferer; but fortunately, through wise counsel, a different course was pursued.

taking; for he thought he had commenced what he could never accomplish; nevertheless, it was finished apparently to his satisfaction; but the mental excitement, which had continued for months, remained after the cause had ceased; in fact, it seemed to increase, inasmuch as he was now under the influence continually of groundless fears respecting his health and pecuniary matters; the former, he thought, was so precarious, as to justify the abandonment of his trade: at this time his appetite was bad, his digestion irregular, and he allowed himself but little time for sleeping. On the 20th of this month the fears of his friends were increased by some act of violence which he committed. They endeavoured to persuade him to remain at home, (for he was in the habit of spending most of his time in walking about, without any special object in view;) but persuasion being useless, compulsion was resorted to, when he got highly excited, and struck his father severely in the face, and escaped from the house, and ran into a store, where he immediately commenced to tumble the goods into the street; was overpowered by numbers, carried home, and was calm some hours. The paroxysm again came on, when he resisted violently, and escaped the second time, and was next found on top of the chimney, pulling off and hurling the bricks into the street, regardless of the safety of those passing by.

Present state. Five hours after admission, stature small; muscles large, compact; hair fine, brown colour; eyes blue; face ruddy; motion quick; head small; anterior developement large; heat of scalp increased laterally and posteriorly; pulsations in temporal arteries 128, turgid; front part of head painful, and "feels as if it was very much enlarged;" conjunctiva injected; pupils contracted, sensible; countenance stupid; tongue moist, tumid, furred; respiration easy; no epigastric tenderness on pressure; frequently sighs; pulsations of radial arteries 128, strong; hands and feet warm.

Mental Phenomena. He remained quiet for half an hour after being placed in a room, then began to pound violently against the door, at the same time screamed, cursed, and raved. In a few moments every thing about him was disturbed and partly destroyed. When the nurse entered the room he was attacked ferociously, and though a powerfully strong man, it was some minutes before he could control the violence of the patient. The paroxysm continued one hour. At present he has no recollection of the late excitement, though he knows he is subject to "sudden strange impulses:" fearful of being murdered, implores protection. Cupped over occiput; syncope induced after the loss of $\frac{2}{3}$ iii. of blood; room darkened; diet farinaceous.

24th. Slept till 4 o'clock this morning, then rushed out of bed, stripped himself naked, and attempted to break the door by running and throwing himself against it. With a demon-like countenance he resisted the attempts of the nurse to enter his room. When overcome, he poured forth volleys of yells, curses, and hideous sounds. In an hour was composed, rational; expressed regret over the past "misconduct." The calm continued about thirty minutes, and was succeeded by another paroxysm of mania. At present, 10 A. M., rational; memory confused; by an effort recalls many of the events of the morning: no cephalalgia; hair dry; scalp loose; skin of forehead soft; scalp generally hot; conjunctiva minutely injected; pulsations of temporal arteries 84; appetite strong; pupils contracted; flashes of light before the eyes; countenance sane; tongue clean at the tip and edges, rest furred, pasty; bowels moved yesterday; skin of body pleasant; pulsations of radial arteries strong, 84; heart's motion regular. Apply cold cloths to the scalp; give ol. ricini $\overline{3}$ ss.; and cold acidulated drinks.

25th. Last evening had two short fits of raving, followed by confusion of thought and loss of memory. 7, A. M., slept till three o'clock this morning, when another paroxysm of excitement came on and continued for an hour; face is now of a bluish-red colour; eyelids blood-shot; pupils dilated; scalp hot; tongue tumid, pasty; pulse about 120; has constant eructations; skin of hands moist; abdomen not tender on pressure; countenance wild, maniacal; beating of the temporal and carotid arteries; muscular actions of the body violent; refuses food and drinks; shakes the head, stamps the feet, distorts the body, cries, swears, vociferates loudly, endeavours to bite and strike all who approach near him; thoughts wild, incongruous, and incoherent. Cupped over the abdomen; syncope was induced; give pil. hyd. gr. i. t. d.

28th. Since the 25th inst. he has had several maniacal paroxysms. They come on about the dawn and close of each day, and were characterized by a disposition to go naked, by preternatural muscular strength, by ferocity of action, volubility and loudness of speech, incoherence of ideas, horrible blasphemies and incongruous remarks. During the intervals the mind was bewildered and irascible. 3, P. M., skin of forehead of a dark red colour, cool; scalp loose, hot; ears cold; pupils contracted; conjunctiva less injected; eyeballs restless, sunken; emaciated; tongue dry, of a brownish colour, rough, less tumid; heart's motion 96, strong; skin of hands and feet cold; capillary circulation weak; pulsations of radial arteries 96, strong; abdomen tender on pressure; bowels confined; refuses food and

drinks; deglutition has not been difficult; respiration easy; memory much impaired; intelligence languid; thoughts erratic; answers are irrelevant; mistakes friends for enemies; vindictive and vociferous. Cupped over abdomen ℥iv. , pulse fell to 88; give oil ℥ss ; apply warm bricks to the feet and fomentations over the abdomen.

29th. Slept soundly till 3 o'clock this morning; from that time noisy till after daylight. 9, A.M., scalp now hot; eyeballs more sunken; countenance more lively; tongue moist; anorexia; frontal capillary circulation more active; pulsations of temporal and radial arteries weak, 96; pupils dilated; conjunctiva moderately injected; teeth dry; gums spongy; tongue moist, furred with a loose white coat; heart's motion irregular; hands cool; tenderness of abdomen on pressure remains; muscular agitation continues; fearful of being "anatomized;" cannot describe his feelings; remarks are contradictory, and have little or no relation to the questions proposed. Cupped over the belly ℥iii. ; feet to be bathed frequently with brandy and red pepper; stop pil. hyd.

31st. Has had no maniacal paroxysm for 48 hours. Last night blisters were applied to the ankles, but they scarcely reddened the skin; slept part of the night; "no pain in head;" eats better; heat of scalp not much increased. The events of the last ten days are indistinctly remembered; complains much of exhaustion, and is scarcely able to walk across the room.

June 1st. Scalp loose, heat normal, hair dry; pulsations in temporal and radial arteries 100, regular; face of a dull red colour, sometimes flushed; pupils natural; tongue moist; appetite improving; countenance at times animated; bowels regular; skin of hands and feet pleasant. Intelligence still dull; during conversation his ideas become so confused that he is unable to finish a sentence correctly; fears of danger are ever present. Of his own accord got up, dressed, and walked into the day room. Diet, vegetable.

19th. During the last three weeks he has regained strength very slowly; for the most part has slept soundly at nights. Heat of scalp has occasionally been augmented; headache was often present, especially after restless nights; appetite moderate; bowels regulated by laxatives; pulse has been variable, sometimes up to 110, then down to 80; skin of hands cool; countenance has been grave; much troubled with eructations; contraction of pupils; hesitancy of speech and slowness of muscular movements. He never offers a spontaneous remark; stands for hours leaning on the window-sill, as if in deep thought; yet, when asked, is unable to tell the scope of his meditation. Occasionally he has been vindictive; always sullen; shows no interest in any employment or amusement which he undertakes. Cupped ℥iv.

July 17th. Since the date of last note there has been an increase of physical and mental listlessness; actions for the most part seemed mechanical; sleeps badly at nights; has had frequently pains in the head; bowels confined; pulsations of temporal and radial arteries generally have been over 100; pupils more contracted; conjunctiva injected; heat of scalp augmented; appetite diminished; countenance angry, face often flushed; tongue clean; discontented, fretful; regards all around in the light of enemies; has manifested a morbid anxiety to return home. To overcome the pain in head, heat of scalp, excitement of pulse, &c., he was ordered to lose small portions of blood from the scalp frequently, in all above $\frac{3}{4}$ l.

Sept. 3d. On the 23d of August, fever of the continued form set in, and was kept up till yesterday. It was marked by frequency of pulse, heat of skin, great thirst, epigastric tenderness, with rose-coloured spots over the abdomen; suffusion of eyes, dry tongue, sordes on teeth. At first the bowels were confined, but towards the termination of the fever the stools were frequent and coloured with blood, no pain; after each one he declared he felt stronger. The mental powers were much depressed throughout the progress of the fever. He was cupped several times over the abdomen; sponged with cold water; cool mucilaginous enemata were often administered; cold cloths kept to the head, and cold acidulated drinks freely allowed. This morning the skin is cool; pulse about 70; tongue cleaning, moist; takes moderately of food; countenance cheerful; intelligence more active; speaks rationally of his present and past states, anxious to see his friends, and to return home *whenever his strength will allow him*. Diet, vegetable.

15th. He walks and rides out daily, and enjoys himself; says that he has during his illness suffered greatly from pain in the head. Appetite strong; sleeps soundly; digestion regular.

20th. Discharged well, and continues so up to this period, June, 1837.

Remarks.—At the commencement of the disease of Mr. S., depletion could be practiced only to a limited extent, owing to syncope coming on after the loss of very small portions of blood. The consequences were, that although the morbid changes in the brain were partly restored at an early period, still some of the cerebral organs remained impaired and gave rise to partial insanity, which was tedious in its course and difficult to overcome. In fact, there was no improvement in the latter until after the subsidence of the febrile excitement, when the mind immediately began to recover its usual tran-

quillity, and correctness of perceiving and comparing the objective and subjective relations of life.

It is easily understood how fever awakens new energies in, and imparts additional vigour to, a brain whose vital forces have been exhausted by long continued disease, as occurs sometimes in dementia, but we cannot comprehend the method whereby insanity was superseded in the above case by the febrile actions, unless we say the permanent irritation of the stomach operated on the principles of revulsion, and thus withdrew nervous and vascular excitement from the cerebral organs. This result, it is not reasonable to suppose, was brought about by the loss of blood during the fever, because the quantity was too inconsiderable, compared with that abstracted on former occasions.

CASE III. *Mania, complicated with gastritis, constitutional; cured.*
—Mr. —, of New Jersey, a widower, was admitted on the 21st of October, 1835, æt. 45, a Friend; by trade a tanner; habits in business industrious; disposition penurious, supercilious, and irascible; mental capacities limited; religious feelings moderate.

Parentage.—His father, at the age of 40, was suddenly seized in the night with apoplexy; convulsions ensued, and death took place on the third day. The mother suffered several attacks of insanity, in one of which she died; a sister of her's was also deranged, and made several attempts at suicide; and a daughter of this sister, in a fit of derangement, destroyed herself. The history of the paternal grandfather unknown. The grandmother on the same side died of apoplexy: she had a son who died crazy at the Asylum. Mr. — had three sisters, two of whom were deranged; the youngest of three brothers died delirious at the age of 16, the second is subject to paroxysmal insanity; the third was never crazy.

24th. Physical state.—9, A. M., stature tall; complexion dark; motion quick; muscles small, firm; cheek bones prominent; eyes blue; hair fine, of a light brown colour. Since his admission, has been excited at times, wakeful at nights, discontented and fretful; at present these symptoms are increased. There are also restlessness of the muscular system, heat of scalp, wildness of the eyes, frequency of pulse, contraction of the pupils, with some incoherence of expression, and a disposition to assume fictitious characters. 2, P. M., heat of scalp much augmented; tongue reddish, moist, granulated, frequently protrudes and retracts it; skin of body hot; radial pulse over 100, soft, weak; "no pain in head," though he often compresses the scalp with his hands; deglutition easy; features wild, distorted; conjunctiva not injected; abdomen tender to pressure; stomach not irritable; feet

and hands cool; thirst great, refuses food; respiration easy; chest resonant on percussion; heart's motion weak, regular.

Mental signs.—He vociferates; thoughts evanescent, have little or no relation to his condition or to surrounding circumstances; they pass rapidly from subject to subject without order or connexion; expressions sententious, abound in rhymes, incoherent, ridiculous; thinks he is surrounded with devils and other aerial spirits; flies are transformed into demons; often ejaculates the words hell, fire, at the same time pressing strongly against the epigastric region. Room darkened, scalp shaved, ice applied to it; blisters on the ankles; cold acidulated drinks freely allowed.

25th. Last evening he was much exhausted; body was covered with cold perspiration; pulse very weak; mental excitement was augmented; raved all night. 8, A. M., scalp very hot; pupils contracted to a mere point; tongue red, moist; fauces dry; often exclaims *I am burning up*; temporal pulse 90, weak, soft; feet cool; skin of body pleasantly warm; countenance variable, generally ferocious; face pale; eyes glisten; hearing acute; smelling obtuse; vision perverted; sensibility diminished; muscular strength augmented, with great muscular mobility. Had a natural stool last night; abdomen tender to pressure; respiration humid; heart's motion weak; ejected from the stomach a worm four inches long. Thoughts disjointed, unnatural, fugacious, ludicrous; now performs an Indian dance, then goes through the manœuvres of a sailor; next paces the room in military pride, or is suddenly seized with a religious impulse, when he exhorts or falls prostrate on the floor, and begins to pray. This grotesque scene is heightened by violent cries, gesticulations, hideous yells, laughs, dismal groans and horrid blasphemies. The blisters drew well. Ordered him confined to bed by means of straps; cold cloths kept to the scalp; cold water given freely.

27th. Yesterday the maniacal excitement was diminished; head painful; pupils less contracted; 1 gr. of sulp. morph. was applied to the blisters, but failed to cause sleep. To-day more unwell; pupils much contracted; tongue of a dark red colour, dryish; hands cold; pulse small, weak, 85; abdomen tender on pressure; bowels moved by an enema; eyeballs restless; adnata clean; countenance maniacal, anorexia; passes urine freely; heart's motion weak, regular; great mobility of the muscles of the upper part of the body; face pale; often presses the hands against the temples; feet cool; all the external senses exalted or depressed; fauces dry; respiration hurried; eyeballs prominent; no injection of conjunctiva; no irritability of stomach; muscles of face distorted; corners of mouth filled with frothy saliva;

refuses food, takes cold drinks with avidity. Expressions boisterous, wild, incongruous, erratic; now religious, now profane; now dramatic, now poetic; now nautical, now pugnacious; endeavours to make his actions correspond to these multifarious dispositions, but before one is ended another is begun. Last night a blister was applied between the shoulders: ordered scalp rubbed with lin. cantharides, and hop fomentations placed over the abdomen.

28th. More rational; slept some last night; face sallow; forehead contracted; eyes sunken; face oily; heat of scalp normal in front, increased behind. Bowels moved twice by grs. vi. of calomel; fauces covered with tenacious mucus, to dislodge which he makes violent attempts. Says that he was much better this morning; pupils still contracted; countenance sane, haggard; eyeballs restless; tongue moist, edges furred with white; papilla enlarged; no actual headache, but vertigo on raising the head; pulse 80, small. Suddenly, without any external cause, he complained of pain in the head; the mind wandered, he became loquacious, boisterous, maniacal; abdomen less tender to pressure; feet cold; tares his clothes; misnames his attendants, some of whom he regards as old friends, others as inveterate enemies; strips himself naked; language highly offensive. Continue the applications of lin. cantharides to the scalp, and give him small quantities of arrow-root.

29th. After I left him yesterday he got worse and worse, till scarcely a ray of reason was perceptible; the raving continued till after midnight. 8, P. M., heat of scalp very much increased; pulsations of temporal arteries quick, strong, 100; pupils contracted; forehead contracted; eyes glisten; features wild; skin of body warm, dry. Bowels moved several times last night; radial pulse quick, frequent; often presses the hands against the temples, and shrieks out as if in pain; also compresses the epigastric region; tongue moist; distorts the face; great muscular agitation of the whole body; mental expressions are still wild and extravagant. Apply ice to the scalp, $1\frac{1}{2}$ grs. of morph. to the blisters.

30th, 6 P. M. He raved the former part of last night, and slept some towards morning; awoke partly rational, and has continued better all day, till within two hours; now in a paroxysm of mania similar to those described. Ordered $1\frac{1}{2}$ grs. of morphia, given by the mouth, and grs. ii. to be applied to the blisters.

Nov. 1st. Yesterday the pulse was about 70, weaker than it had been; head was painful; tongue moist; skin cool; feet swollen; legs in an erysipelatous state; hearing very acute; sight perverted; mind more composed. This morning, heat of scalp augmented; countenance

furious; pupils very much contracted; tongue dryish; forehead contracted; eyeballs rolling; muscles of mouth distorted; pulsations in temporal and radial arteries weak, soft, small, 100; heart's motion weak; tongue covered with white frothy mucus or saliva; refuses food and drinks; snaps at any thing carried near the mouth; general sensibility lessened; great muscular mobility; feet and hands cold; hearing acute. He slept the fore part of last night; at midnight began to rave, and has continued to do so from that time to this, almost without intermission. *Noon*—He still raves; tongue is dry, brownish; abdomen very tender on pressure. Ordered $\frac{3}{4}$ ss. of blood taken from abdomen, to scarify it freely, and rub liniment cantharides over the incisions; grs. v. sulph. morph. applied to blisters.

2nd. Yesterday he had a bloody stool, with tormina, tenesmus, and some vomiting. He raved till 1, A. M., when consciousness returned, and he conversed rationally for a few minutes, complained of drowsiness, then fell asleep, and slept till after daylight, when he was perfectly rational. 8, A. M., complains of exhaustion; face of a waxen white colour; strangury; very drowsy; heart's motion weak; tongue moist; pupils more dilated; muscular agitation ceased; skin moist; nausea, occasionally vomits. *Evening*—He has slept most of the day; now drowsy, falls to sleep while conversing; passes large quantities of urine, attended with some pain; feet still swollen; answers questions correctly. He has a proper conception of his present and past states; fearful of a relapse; irritable, captious, the most delicate attentions fail to satisfy him. Ordered the patient to be placed in another room.

5th. On the third instant his tongue was dryish, now moist; no tormina or tenesmus; when at rest has no pain in head; face pale, sallow, emaciated; pupils nearly natural; thirsty; pulse about 80; swelling of legs subsided; hearing more obtuse; sensibility much increased; complains of blisters and of muscular soreness; appetite moderate; constipation; totters when walking; for several days has had frequent returns of vomiting; sleeps soundly at nights; irascible and peevish. Blisters dressed with savin ointment; give him ol. ricini $\frac{3}{4}$ ss. Diet, animal soups, black tea, bread and butter.

10th. During the last five days has been improving: now in the day room. He is more excitable towards evening; sleeps soundly for the most part; pulse 60; appetite moderate; hearing obtuse; frequently at nights has unpleasant dreams; irritability of temper subsiding; conversation, if sustained for any length of time, causes pain in head. Diet full. Blisters healed.

13th. Restless nights (which he occasionally has) are followed by

pain in the head, and an increase of irritability of temper; bowels regulated by laxatives; appetite strong; hearing very obtuse. Rides and walks out daily.

Dec. 1st. Discharged, well.*

Remarks.—During the progress of this case the stomach became involved in disease, and symptoms of gastritis appeared; while at the same time the morbid actions of the brain were for a short period increased. This complication is not an unusual occurrence in mania; and though it places the life of the patient in more danger, it is generally, by careful management, successfully dissolved, when the maniacal symptoms abate and convalescence often speedily ensues, as seen in this and in the second and fourth cases.

The weak state of the pulse of Mr. ——— forbid the use of cups, except to a very small extent. On the propriety of depletion we are governed generally by the pulse; but if unequivocal signs of cerebral congestion or inflammation are present, with high maniacal excitement, topical blood-letting should be resorted to, without strict regard to the condition of the pulse. Confirmatory of this remark, we have unhappily met with more than one illustration where the lives of our patients, it is feared, were sacrificed by a dread of depletion.

Obstinate wakefulness is one of the most constant symptoms observed in mania: it often continues for many days and nights in succession, without that exhaustion following which so commonly happens in other affections. To relieve it, if not contra-indicated, anodynes should be given after depletion, and sometimes without, either by the mouth or applied to blistered surfaces, as was done in the third case. Here the effects of the morphia were seen for more than thirty-six hours after its application, during all of which intense drowsiness continued, and upon its subsidence he rapidly recovered. At the same time his hearing, which was previously very acute, became more and more dull, until lost almost in deafness.

CASE IV. Mania; followed by fever, with oppression of the mental powers; cured.—Mrs. B. A. S., of Pennsylvania, æt. 26, a Lutheran, entered June 7th, 1836; disposition kind; mental parts strong; careful in the performance of religious and domestic duties; general health

* He was taken home prematurely by his friends; the consequence was a relapse in less than a week, when he was returned to the Asylum, and remained here several months. For the most of the time he was apparently comfortable, till in March, 1836, he became highly excited, and refused food. On the second day he was compelled to eat, when he remarked, "you may force food into the stomach, but you cannot force it to remain there," and immediately ejected it. Thus he acted for ten days, when he calmly and suddenly died.

good; recently more or less subject to rheumatism. Her mother and maternal aunt have been deranged. In April last, after an easy labour, she gave birth to a child, and at the usual time got about. Just then the eldest daughter was taken ill, and continued dangerously so for several weeks, during all of which Mrs. S. watched over the sick couch with a mother's fondest care. Her strength was unequal to the task. The fears and anxiety she experienced, together with loss of sleep and appetite, reduced her already enfeebled health. The child improved, but the mother was ever by its side, till about ten or twelve days before her admission here, when she was confined to bed by an attack of inflammatory rheumatism, for which she was bled three times, and thereby entirely relieved. At the end of the third day the disease returned, and she was again bled; the pain now ceased, but the mind on one or two occasions seemed bewildered, which, however, at first did not attract much attention among her friends. On the day following she evinced evident signs of insanity, by talking wildly and in wringing the hands. From this period she slept none, up to the date of her entrance into the asylum.

June 8th. Physical condition.—Stature small, body delicate; muscles small, relaxed; emaciated; complexion fair; hair light brown; eyes black; motion quick; anterior developement of head large, superior above the average height. Immediately after being placed in a room yesterday she stripped herself naked, and in a few moments shattered the glass, bowls and chairs to pieces, and hurled them with malignant fury at those who attempted to approach her. The face was flushed; eyes wild; pulse 130, soft, small, weak; tongue dryish. Ice was kept to the shorn scalp, and fomentations of hops and cicuta leaves to the abdomen. At present, 10 A. M., scalp pale, loose, heat augmented; cheeks flushed; pulsations of temporal arteries quick, weak, of carotids strong, 136; pupils dilated; eyeballs roll in their sockets, sunken; countenance ferocious; general restlessness of the muscles; tongue pale, moist, clean; breath bad, respiration easy; lips pale; appetite moderate; tenderness of the upper part of the spine on pressure; heart's motion quick, weak, regular, 134; no abdominal tenderness; skin of body cool.

Mental phenomena.—She manifests great maternal uneasiness; often starts, and shrieks at the imaginary cries of her children; thinks they are in some part of the house undergoing cruel operations, implores protection for them, and wrings her hands in despair; vociferates for a few moments, then is comparatively tranquil, when she correctly answers some questions, others she seems not to understand; memory confused, ideas wander. *Evening*—She has had since morning two

paroxysms of raving, during which she screamed, beat her breast, and inflicted several wounds on the body by striking it against the walls of her chamber; they lasted about an hour. Give sulph. morph. $\frac{1}{4}$ gr.

9th. Slept none last night, often rushed out of bed and attacked with preternatural strength her attendants; was several times in the course of the night seized with tremors of the whole body. At present, heat of scalp increased; face flushed; pulse very weak, small, quick; pupils dilated; tongue moist; anorexia; bowels moved by an enema; stool natural. Raves incessantly; scalp covered with ice; patient kept in a chair by straps. Give cold mucilaginous drinks.

10th. Wakeful all night, frequently excited, and though carefully watched, she found opportunities to bruise herself very severely against the bedstead. $5\frac{1}{2}$, A. M. She has screamed constantly for the last two hours; heat of scalp much increased; countenance daring, wild; pupils dilated; general sensibility greatly diminished; pulse 134; heart's motion strong; tongue dry, red; thirst great; indifferent about food; deglutition easy; respiration hurried; raves and vociferates without forming articulate sounds. Cupped $\frac{1}{2}$ vi.; ice kept to scalp. *Evening*—After the loss of blood in the morning the pulse was not over 90, but in six hours fever came on; face flushed; head hot; tongue dry; skin hot; thirst great; mental powers oppressed. At present, face pale; tongue covered with whitish-yellow fur; skin hot; eyeballs sunken; forehead oily; pupils dilated; pulsations of temporal and radial arteries 112, small, weak; hands cold; bowels regular; consciousness dull; seldom speaks; drowsy. Sponge body with brandy and cool water; ice kept to head.

11th. Raved from 3, A. M., till after daylight. 8, P. M., fever commenced again about noon, and continues; heat of scalp now great; skin of body hot, dry; eyes suffused; conjunctiva injected; pupils dilated, sensible to strong light; pulsations of temporal arteries 112, turgid, strong; rigidity of the arms; countenance stupid; pulsations of carotids strong; cheeks flushed; heart's motion full, strong; some irritability of stomach; thirst intense; feet cold; lower extremities in constant motion; tongue dry; face shining. Disposed to leave the bed; now and then ejaculates broken sentences; then is silent for some time; insensible to surrounding impressions. Cupped $\frac{1}{2}$ xi. from scalp; sponge upper part of the body with cold water; cold cloths kept to the head; takes $\frac{1}{2}$ ss. eff. mixt. hourly.

12th. Slept an hour or so last night; often started and shrieked out as if in pain; fever remitted from 7 o'clock this morning till about noon. 8, P. M., countenance stupid; pulsations of temporal and radial arteries about 134; disposed to sleep; cheeks full; respiration

easy; heart's motion weak; lips pale; feet cool; skin of body hot; thirsty; arms rigid and tremulous; body at times partly convulsed; sensibility low; fingers clinched; strabismus; left hand cool, right hot; mental powers much oppressed; seldom speaks; heedless to questions; give infus. digitalis \mathfrak{Z} ss. with sulph. morph. $\frac{1}{16}$ gr. every hour. Cupped \mathfrak{Z} iv.; fomentations over abdomen.

13th. Slept two hours last night; took \mathfrak{Z} ii. infus. dig. and $\frac{1}{4}$ gr. of morphia. 11, A. M., fever came on early this morning, not so high as it has been. Heat of scalp lessened; pupils much contracted; sensibility still impaired; muscles of the arms rigid; pulse 112, soft; strabismus; countenance dull; bowels moved yesterday; thirst great; teeth dry; tenacious mucus between the lips; will not show the tongue; intelligence very dull. Cupped \mathfrak{Z} iv. from occiput; body sponged with cold water, &c.

Evening. She has taken through the day \mathfrak{Z} ii. of the infusion of digitalis; the morphia was suspended; fever continues; ordered the patient to be wrapped in blankets, steeped in hot water, for five minutes.

14th, 6 P. M. The scalp has been too hot all day, but there has been little or no fever; countenance more lively; has slept several hours soundly in the course of the day; thirst is much diminished; lips moist; tongue reddish, moist; pupils contracted; sensibility returned; complains of soreness of the muscles; pulse 84; bowels moved by enemata. Expresses much surprise from the fact of being surrounded with strangers. Consciousness is more perfect than it has been since her illness. Stop all medicines.

17th. For three days has had some fever in the afternoons; during the mornings the pulse was about 90; mind becoming more and more correct.

22nd. She is daily acquiring strength; now in the day room; pulse 82; appetite bad; bowels confined; sleeps soundly at nights; heat of scalp natural; face pale; three days since she took some animal soup, which caused fever and confusion of mind; both were relieved by taking \mathfrak{Z} iv. of blood from the scalp. Diet, vegetable.

29th. She walks and rides out daily; anxious to return home; she is now considered convalescent.

July 1st. Discharged, well.

Remarks.—The general characteristics of mania in this case were lost by the supervention of meningitis, marked by slight convulsions or tremors of the body; by a disposition to sleep and to remain in bed; frequency of pulse; hot skin; great thirst; intense heat of scalp; contraction of the pupils; partial coma; and oppression of the mental

powers. Before their occurrence we were deterred from abstracting blood, in consideration of her enfeebled health previous to, and at the period of, her admission; but their presence showed a necessity for the daily abstractions of blood she underwent without regard to the strength of the pulse; and had this course of treatment been practiced earlier, it is likely the complication might have been prevented.

Frankford Asylum, June, 1837.

ART. VII. *Observations respecting Smyrna and its environs.* By
G. R. B. HORNER, Surgeon U. S. frigate United States.

Smyrna, the grand emporium of Turkey in Asia, contains about 150,000 souls, and is situated in lat. $38^{\circ} 26'$ N., and in long. $27^{\circ} 7'$ E., from Greenwich. It is built at the head of a beautiful gulf, bearing the same name, partly on the side of a very lofty hill meriting the epithet of a mountain, and partly on a plain extending for five or six miles in an easterly direction to the foot of a high ridge of mountains bounding the gulf on the north and the east. Through this plain flows the Meletis, a rapid and crystal stream, which tradition states to have been the favourite resort of the illustrious Homer, to whom Smyrna boasts she gave birth. The plain having a rich alluvial soil, being in a high state of cultivation, producing a vast quantity of vegetable matter, and being constantly in a state of great humidity, either from rain, snow, the Meletis, or from irrigation, may be justly termed unhealthy, as it must be an abundant source of malaria.

Between the mountains, overhanging the gulf on the north and its waters, is an extensive plain, which is in part finely cultivated, and in part overflowed and converted into pans for the manufacture of the muriate of soda, immense pyramids of which at all seasons may serve for landmarks to vessels navigating the gulf.

The face of the country on the west and south sides of the gulf correspond with that on the east and north, being marked by lofty mountains, overlooking alluvial and fertile plains. At the base of one of the mountains, on the south side, is a hot spring, of great celebrity; and some miles to the west of this one, near the town of Dourlack, is a sulphur spring, the waters of which are much esteemed by the inhabitants of the vicinity and those of Smyrna. The want of accommodations, however, prevent persons from resorting much to these springs.

The gulf being so completely pent up by mountains, the evaporation from it is very great, both during summer and winter. The water evaporated in the day is either precipitated at night, or condenses into clouds, which obscure the mountains, cover them with snow, or drench them and the plains with copious showers.

During the summer the embat, or sea breeze, blows with great regularity, from ten o'clock in the morning until six o'clock in the afternoon; and with such force, that the landing even in the city is rendered by the agitation of the water difficult and somewhat dangerous. In the winter the embat seldom occurs, and when it does, is extremely light; but in place of it the wind blows from various quarters, frequently from the north-east, and then is accompanied by heavy falls of rain, hail and snow, and the formation of ice. This wind is keen, damp, piercing, and quite as unpleasant as it is in the United States. Its coldness and other bad qualities may be ascribed principally to its passing over the mountains bounding the gulf on the north and east, but more especially to its sweeping across the still higher chain of Olympus, which runs along the south border of the sea of Marmora, and which I have seen covered with snow in August.

The climate of Smyrna, in the summer and fall, is hot and dry; in the winter and spring, damp and cold; but during the latter seasons there are great vicissitudes of weather, as, for instance, in the last month, January, the thermometer varied from thirty-two to sixty-six degrees. The air was of the former temperature while the wind was from the north-east, and of the latter temperature when it was blowing from the south-east. Last winter the thermometer was twelve degrees below the freezing point. I was informed by one of the citizens that the snow has fallen eighteen inches in depth, and remained for three weeks on the ground. The general failure of the crops of oranges, grapes and figs, last year, not only in quantity but quality, was owing to the severity of the winter.

Hospitals.—They are eight in number, viz. the Dutch, Austrian, French, English, Greek, Armenian, Turkish, and the Catholic and Protestant Hospital.

The Dutch Hospital was founded in 1786, and repaired in 1834. It is a neat stone building, plastered over; is one story high, forms an oblong square, has a well paved court, into which all the doors and windows open, and is large enough to accommodate forty or fifty patients. In front of it is a large yard, filled with bay and orange trees; and at the back of it is a handsome cemetery, for the interment not only of those who die in the house, but for that of any Dutch citizen. In the hospital is a dispensary for the benefit of its patients,

and that of all the poor, whether Christians or Mahometans, who may apply for medical aid. Both the hospital and dispensary are under the patronage of the Dutch consul, Mr. Vanlennop, a most worthy and benevolent man, and are attended by Dr. Morpogo, a native of Trieste, who is distinguished as an oculist, and receives for his services a salary of 150,000 piastres a year, which amount to about 700 dollars.

The Austrian Hospital was founded in the year 1788. It is in the heart of the city, and near the Dutch, English, and Greek Hospitals. It is three stories high, has a court, verandas to each story, a terrace on one side, and is capable of accommodating a hundred patients. It is kept in good order, is neat, and has the appearance of having been recently erected. It is supported by the Austrian government, and intended for the reception of all Austrian subjects. The attending physician is Dr. Amber, who was formerly in the navy.

The French Hospital is situated at the eastern end of the city, near the harbour, and consists of two buildings, standing in separate lots or yards, each of which occupies about a half acre of ground. One of these houses is for officers; the other for seamen, &c. The former is new, two stories high; is built of wood, brick and plaster, and about fifty feet square. Adjoining its yard is a handsome garden of nearly the same extent. The latter building was an old Turkish residence, and was purchased nine years ago. It consists of a large three story house, with two wings extending back, and is built entirely of wood. It contains a kitchen, an apothecary's shop, a bath room, chapel, and several wards of good size. The two buildings might perhaps accommodate a hundred sick, but now have only sixteen—three officers and thirteen sailors. Each patient is charged a franc daily for his support, provided he is able to pay; but any poor French subject is supported gratis. The institution is under the direction of the French consul, and attended by Dr. Pecor, of the navy.

The English Hospital stands on the opposite side of the street to the Dutch. It is made of stone, is two stories high, has four rooms below and four above, and a yard in front and at the back. In the back yard are some small out-houses, and several handsome tombs of British subjects. This Hospital was founded in 1785, is supported by the English government, and is intended for sailors in the navy, and also for those in the merchant service. It was for a long time under the care of Dr. Clark, of the navy, who was an eminent physician of Smyrna; but he having lately returned to England, it is now attended temporarily by Dr. Icard, a Frenchman by descent, who has a high reputation, and is one of the most distinguished of his profession.

in the city. Dr. Evans, surgeon of H. B. M. ship *Tribune*, now there, it is said, will be appointed in the place of Dr. Clark, and will receive, besides his half pay, the usual salary of £300 sterling per annum.

The Greek Hospital was erected in the year 1779 by the Greek population, is maintained by them, and is for their exclusive benefit. It is an extensive building, being about one hundred feet wide and two hundred in length; is two stories high, and has a court paved with stone flags. In the first story are the cells for maniacs, the dispensary, kitchen, wash rooms, and some apartments for the paupers. In the second story are the medical and surgical wards, which are kept in neat order, and arranged after the European manner. The bedsteads consist of two wooden stands, with two boards laid across them. The beds are formed of sheets, blankets, coverlets, and mattresses, well stuffed with wool, and are surrounded by calico curtains, hanging from frames suspended by cords from the ceiling. Each bed having a distinct set of curtains, any patient can seclude himself from the view of his neighbours, and shut out the glare of candle and daylight—all which things are desirable to a sick person, and not to be obtained in our Hospitals. Were this plan adopted in them, it would be certainly thought an improvement by the sick. The chief articles of diet are rice, bread, and stewed meats. All poor, superannuated and disabled Greek citizens, find an asylum in this institution. Its inmates are three hundred and fifty in number, of whom fifty are insane. The attending physician is Dr. Marsganar, one of the most noted Greek practitioners. At the back of the Hospital are a cemetery, a free school for Greek girls, and a pest-house, in which are put the patients affected with plague. High walls separate the pest-house from the other buildings. It is a large stone house, of a gloomy aspect, having few doors or windows, and neither painted nor plastered. It is appropriated to the use of the Greeks alone.

Of the Armenian Hospital I will say but little, for it is hardly worthy of notice. It stands in a close, confined part of the Armenian quarter, and is composed of four frame houses, set around a small lot, the best and next to the largest of which is used as a chapel. This is a similar institution to the Greek Hospital, being designed for the infirm and poor Armenians, but is much inferior in every respect; being illy arranged, wanting cleanliness, and having small, badly furnished apartments. The beds are miserable pallets, spread on the floor. It contains some old men and women, a few maniacs, and twenty patients. The most remarkable of its inmates is a man who has lost his nose, and wears in place of it a piece of perforated tin,

resembling a nutmeg grater. Dr. Ricopoli, a native of Scio, and who was educated in Italy, is the physician.

The Turkish Hospital is situated a mile to the west of the city, on the south side of the harbour, and in a beautiful level valley formed by two hills. The Hospital consists of two buildings, with a large court between them, and connected by very lofty walls. In the front wall is a large gateway, with an inscription in Arabic characters above it, and covered by a pretty portico, supported on four pillars. One of the buildings is in an unfinished state; the other has been built and used for years. The latter is eighty feet in length, forty in width, is two stories high, has three rooms, with grated windows in the first story, and in the second one a spacious entry, with Venetian blinds. On the sides are two large and well ventilated apartments, which have their ceilings painted in broad red, white and blue stripes, and their floors higher at one end than at the other. At the south end of this building is a white marble fountain; and on its west side, two gardens, containing together a couple of acres. In the garden farthest from the Hospital, is a pest house, which is a small stone edifice, painted red, and partly dilapidated. It has not been used for several years, and is now better suited for the dead than the living. The Hospital is deserted, save by the keeper, an aged Turk and his family, who occupy the unfinished part. The sick of the army, who were formerly sent to it, are now kept in the new barracks, which are large enough for two thousand men, but are occupied by only eight hundred. Dr. Floquier, a Frenchman, is the physician to both the former and latter place, and is in the service of the governor, Hussan Bey. This Hospital is not a receptacle for the poor, blind and infirm of any class, not even of the Turks; for this nation leave the care of such persons to Providence, and view their sufferings with indifference, believing that they are the manifestations of divine will and the decrees of Fate.

On the left or western side of the Meletis, near the caravan bridge, and about a mile from the city, is the Catholic and Protestant Hospital, or the European lazaretto. It was founded in 1815, on a small scale; but at this time is composed of twenty houses, one story high, built around a court of an oblong shape, containing nearly an acre, and planted with rows of trees. These houses are made of frames, filled in with mortar and sun-burnt bricks, rendered stronger by having been worked up with straw. They have roofs of fluted brick tile, contain one or two rooms, do not communicate with each other, and have all their doors and windows opening into the court. I found some masons and carpenters busily engaged in finishing several houses

lately put up. To protect the walls from rain, and increase their neatness, a coat of plaster is spread over them exteriorly and interiorly. Water is supplied from the river and two wells in the court. This establishment was formed and is supported by the Frank population. It is designed for the reception and quarentining of all poor Catholics and Protestants who have been exposed to the plague. For the information of such persons and others, the following inscription has been put over the outside of the gate. “Hospice destine aux pauvres compromis de peste—Catholique et Protestant.” On the same side of the Meletis, and a few rods lower down it, the Greeks are engaged in the construction of a similar institution to that last mentioned. They have a lot of about two acres of ground, enclosed by a high stone wall, and are hauling materials for the erection of buildings. For present use there are ten small huts of plank standing about the lot and against the wall; they were occupied by from twenty to thirty men, women and children, who had been brought there from Bournabat, an adjacent village, in which the plague was prevailing. They had lost some of their relatives by the disease, and were put in quarantine until suspicions of their having been infected should be removed. They were not strictly confined, but were allowed to come without the gate, sit in the road, and converse with passengers and persons on the opposite bank of the stream, which, there, is not more than twenty feet across.

Bagnios. There are several of them. The principal one is that close by the bazaars. The description of this one will answer for all the others. It is a spacious edifice, divided into two grand apartments, communicating by the doors of a room between them, and having vaulted ceilings, formed by two domes, composing the roof. In one of these apartments are ottomans, shelves loaded with towels and quilted coverlets, and a bar where the keeper sits to receive pay and deal out refreshments. The other apartment is for bathing. It has a white marble floor, raised to a platform in the centre; a small chamber in each corner; fountains of cold and hot water on its sides; and has its ceiling pierced by numerous square holes, admitting light and letting out the vapour. Beneath the floor are the furnace and boilers. Water is supplied by wooden pipes passing under the city. A person wishing to bathe enters the bagnio by a flight of granite steps, immediately on the street, and is forthwith surrounded by the telackes or bathers, who are naked, save having their loins covered by aprons. He chooses a telacke and ottoman. Assisted by the telacke he undresses, his clothes are deposited upon the ottoman, a towel is tied about his waist, and he is led into the bath. Oppressive heat and a sense

of suffocation seize him, from being plunged from the fresh air into an atmosphere charged with the dense steam arising from the heated water issuing from the fountains and running over the floors. Lying down on the platform, the elevated sides of the floor, or entering one of the chambers and closing the door by a curtain he soon breaks out into a profuse perspiration, and is relieved from the sense of heat and suffocation. The telacke then comes and with his right hand covered by the sourran, a black hair bag, rubs him from head to foot, rolls up the old cuticle in enormous cylinders, oftentimes as large as crow quills, and three inches long; next lathers him with soapsuds, cleans his head of scurf, then washes him by dashing basins of water taken from a fountain; and, if it is desired, performs the operation of ovalar, or twisting and cracking all the joints of the extremities. The bathing done, the telacke wipes him as dry as the steam will permit; puts a towel around his loins, gives him a pair of clog slippers, and conducts him to his ottoman. He there lies down, envelopes himself in a coverlet, and remains until cool and perfectly dry. Then dressing, he reclines or sits cross-legged on his couch, smokes a pipe, drinks a cup of coffee, calls to a servant and deposits his reckoning on a small waiter handed him. The price of the bath is according to the means of the person taking it, and varies from five to a hundred piastres; that is, from a quarter to five dollars; although, ordinarily, it does not exceed one dollar. Any amount exceeding the last sum may be considered a donation.

Apothecaries. There are several who keep shops well furnished with drugs and medicines of every kind, and at reasonable prices. Most of the medicines are brought from France. The best rhubarb comes from Russia; opium is scarce, and has almost ceased to be an article of export from Smyrna. For large quantities orders are sent to Constantinople; that now being the market for it, since the opium trade has been monopolized by the Sultan, whose agents pay the cultivators the price established by him, collect and send it to the store houses of the capital. This price being very reduced, the cultivators make little or no profit from the article, and raise less of it every year. Of course its value is gradually increasing. Its present price at Smyrna, I was informed, is from four and a half to five dollars a pound, and must continue to increase as long as the Sultan monopolizes its sale. The Turks seem to be leaving off the consumption of opium, and to be taking to that of wine and ardent spirits, great quantities of which are imported. I have met with only one of them who was an opium chewer. He was Hussan Bey's jester, who showed more nervousness than he displayed wit.

Physicians. Of these, besides those already mentioned, are Dr. Mizato, Dr. Raffinesque, an Italian, and many others, natives and foreigners. All the regular practitioners have been educated in France and Italy, there being no means of instruction in Smyrna, or any other part of the Ottoman empire.

Diseases. Having the above account concerning the situation of Smyrna, and of the fertile plains in its vicinity, it is hardly necessary I should state that among its most common diseases are miasmatic fevers, especially intermittents. The crew of this ship has fortunately, from being there in the summer time, escaped them; but that of the John Adams, the vessel in which I made my first cruise to the Mediterranean, suffered sorely from them, while she was engaged in convoying vessels from Smyrna during the summer of 1833. In the month of August of that year, she had so many cases aboard, that it was found necessary to take refuge in the harbour of Milo, and remain for three weeks. The plague has prevailed at Smyrna four times within the last seven years, but has not been by any means so destructive as has been stated. Before paying my last visit there I heard at Malta that two hundred persons were dying at the former place every day; and when we arrived I ascertained that there were a few straggling cases in the city and neighbourhood, and not more than two hundred of them had occurred from the beginning of the fall; the time when the disease last broke out. If it is prevalent the wealthy inhabitants shut themselves up in their houses, which have courts, and undergo a voluntary quarentine, holding no communication with one another, save what cannot be avoided, and receiving their provisions through water, which is thought a purifier. Cats at this period are forbidden access to their houses; people believing that these animals have communicated the plague from one person to another. The physicians appear to know as little of this disease from personal observation, as those of countries where it is unknown; for none of them will attend a case, because, if he should, he would not be allowed to attend patients affected with any other malady. The treatment of plague then, must necessarily be bad to an extreme, and is entirely empirical. Those sick of it are often carried into the fields, and placed beneath tents, even in the coldest weather, as happened last month. Having to suffer from improper treatment, cold, hunger, thirst, and contend with a violent disease, few of them live to see their homes. The treatment such, who can be surprised at the great mortality? Small-pox, consumption, catarrhs and other affections of the respiratory organs, may be, with great propriety, classed among the most common maladies of Smyrna. Small-pox is ever

there, vaccination being so little and imperfectly practiced. No intercourse can be held with this city by a man-of-war, particularly by one of large size, and having consequently a numerous crew, without great danger of getting this pest aboard. The Constitution got it there last winter, and the crew of this ship are now infected, three cases having occurred and more being reported. The first case terminated fatally, being of the confluent kind, and connected with catarrh. The frigate putting to sea the day after the occurrence of this case, I was unable to prevent farther infection by sending it ashore. The ship being still at sea all susceptible persons aboard will probably be infected.

We arrived at Smyrna with fifteen on the sick list, and left it with ninety; the largest list I have ever known in any vessel to which I belonged. Of this number eighty were affected with catarrh of the severest nature, having been attended with high fever, sometimes with delirium, and mostly with intense headache and rheumatic pains. A seaman who had been phthisical for some time, but able to attend to duty, died of consumption four weeks after his admission upon the list.

Notwithstanding Smyrna abounds in pulmonary complaints, and many of its inhabitants are annually carried off by phthisis pulmonalis, it is becoming a rendezvous for people having this disease. A good many have resorted there from the United States; and I was told of four or five who have lately died. I can hardly conceive a more striking instance of folly than for a patient thus to leave his friends, give up the comforts of home, traverse five thousand miles of sea and ocean, undergo the dangers and hardships of such a voyage, suffer the anxieties caused by absence from those most loved, and fix himself in a strange city, which has a worse climate than that of a great portion of his native country; which has no good hotels or other houses for travellers; has damp, muddy, filthy and narrow streets, whereupon the sun never shines; is constantly afflicted with plague, and abounds in the very disease with which he is afflicted.

Port Mahon, Feb. 1837.

ART. VIII. *Dislocation and fracture of the Astragalus; unsuccessful efforts at reduction; extirpation; amputation; death. With Remarks.* By GEORGE W. NORRIS, M. D., Surgeon to the Pennsylvania Hospital.

William Summerill, ostler, æt. 30, was admitted into the Pennsylvania Hospital, Sept. 26, 1831, and came under my immediate care under the direction of Dr. J. R. Barton.

An hour previous to admission, while descending a ladder, he slipped and fell in such a manner as to throw the entire weight of his body upon the outer part of his left foot. Upon examination the foot was found to be turned inwards, and nearly immoveable. A slight depression existed immediately below the lower end of the tibia, and there was a considerable hard and rounded projection on the outer part of the foot, a little below and in front of the extremity of the fibula. The skin covering this projection was reddened, but not excoriated. There was no fracture of either bone of the leg.

These appearances rendered it evident that the injury was a dislocation outwards and forwards of the astragalus; and a short time after admission efforts were made by Dr. Barton to reduce it. This was done, after relaxing in as great a degree as possible the muscles of the leg, by fixing the knee and having assistants to keep up extension by seizing the heel and front part of the foot at the same time that the bone was pushed inwards and towards the joint by the surgeon; these efforts were continued for a considerable time, but had no effect in changing the position of the bone.

Six hours afterwards Drs. Hewson and Harris saw the patient, in consultation, when attempts were again made at reduction, which not proving more effectual than on the first trial, the excision of the displaced bone was determined on.

The patient being properly placed, an incision was made through the integuments, parallel with the tendons, commencing a short distance above the projection on the foot, and extending down far enough to expose fairly the astragalus and its torn ligament; the bone was then seized with forceps and easily removed after the division of a few ligamentous fibres that continued to connect it to the adjoining parts. Very little hæmorrhage occurred; two small vessels only requiring ligature.

After removal it was discovered that about one half of the surface which plays in the lower end of the tibia, had been fractured, and remained firmly attached to the extremity of that bone, and as it was

judged that the efforts necessary to remove this would be likely to produce more injury to the joint than could arise from allowing it to remain no attempt was made to extract it.

The joint being carefully sponged out, the sides of the incision were brought accurately together by means of a suture and adhesive strips, after which, simple dressings and a roller were applied, and the foot, restored to its natural position, was placed in a fracture-box.

Sept. 27th. Had a restless night, having suffered from pain in the joint. Pulse good; skin moist; no thirst; has now but little pain; has taken opium freely since the operation, which is to be continued. Low diet.

28th. Passed a good night; is without fever; no pain in the foot, which lies comfortably in the fracture-box: dressings are moistened by oozing from the wound, but have not been disturbed; bowels confined. Common enema; opium continued; soup.

29th. Does not complain of limb; rested well; general symptoms good; dressings removed; no union; wound suppurating freely. Opium continued; soft poultice to the part.

October 1st. Yesterday (30th) a portion of the skin on the outer part of the foot was red, and tender to the touch, and to-day a small slough, about an inch in diameter, occupies that part: wound, nevertheless, looks well, though the suppuration is more free. Same treatment continued.

5th. Since last report the discharge has been gradually augmenting, and is now profuse. Slough did not increase in size, and was not deep; bowels regular; pulse more frequent and feeble; tongue clean; night sweats. Good diet, with porter; opium and poultice continued.

8th. Both ligatures came away; suppuration continues free; a collection of pus has formed near the internal malleolus, for the free discharge of which a counter-opening was made; heavy sweats at night; no diarrhœa; appetite failing. Sol. sulph. quinine; morphia at night.

By the 15th, the discharge of pus had greatly lessened, and his general symptoms had improved.

December 12th. To day that portion of the astragalus which had been suffered to remain attached to the tibia was found to be carious and loose, and was removed. Constant pressure on the heel has produced ulceration of it. The limb is much swollen; wound has made but little progress towards cicatrization; granulations are exuberant and of a light colour; secretion of pus still great; general symptoms good. A probe introduced through either opening into the joint,

shows the surfaces of the adjoining bones to be rough, softened, and evidently carious.

March, 1833. Since the last report, (a period of fifteen months,) various means have been resorted to for the removal of the carious portions of bone and cicatrization of the wound, but unsuccessfully. At this time the bones of the foot and ends of the tibia and fibula are all diseased. The patient's general health has suffered severely from the long continued irritation. He has well marked hectic fever, accompanied by heavy night sweats; he has also frequent attacks of erysipelas in the limb, and diarrhœa. Amputation of the leg was now looked upon as the only means of saving his life, and was accordingly done on the 27th by Dr. Barton.

The circular operation was performed, and union by the first intention attempted. The stump never took on a good appearance, showing no disposition to unite, and discharging a thin fœtid matter. His diarrhœa returned a few days after the performance of the amputation; his strength failed, and he died on the 5th of April.

Examination of the amputated limb showed that no attempt at regeneration had been made in the joint; the bones of the tarsus and ends of the tibia and fibula were in a great measure deprived of their cartilages, and so much softened, as to be readily cut into with a scalpel. The tarsal ends of the metatarsal bones were also softened, and the tibia was spongy in its whole extent, and remarkably light.

The records of our science possess but few cases of luxation of the astragalus, not complicated with laceration of the integuments; and an examination of those reported show that surgeons are at variance in regard to the best mode of treatment of them. All agree that efforts should at first be made to restore the displaced bone; but this failing, as in the majority of instances it does, where the luxation is complete, what course is to be pursued? Is the bone to be suffered to remain in its new situation, or is it to be removed? If permitted to remain, violent inflammation of the integuments and joint is almost certain to follow, in which event there is great danger, from the state of tension the parts are placed in, of gangrene occurring and necessitating the amputation of the limb if not endangering the life of the patient; and even should the dangers of inflammation and gangrene be escaped, and a natural cure take place, great deformity and lameness must necessarily ensue, and the patient will remain more or less liable to ulceration of the skin over the projection on the outer part of the foot. For these reasons we deem the practice pursued in Summerill's case of excising the astragalus, far preferable to leaving the cure to nature; and the limb cured by the removal of the bone,

though shortened and ankylosed, will be found both more useful and slightly than the club-foot deformity left after a natural cure.

Desault* reports two cases of this accident; one he reduced without difficulty, and the other he succeeded in replacing after enlarging the wound of the capsule. Boyer† details one case where the bone was left undisturbed; on the 18th day inflammation came on, and terminated in gangrene, when the limb was amputated with success. Mr. Gooch‡ relates a case of an irreducible laxation of this bone, in which he deemed it proper to amputate the limb. Sir A. Cooper§ gives two cases, both irreducible. The first was attended with fracture of the tibia at the internal malleolus, and was left to nature; “the integuments sloughed, and the wound was a long time in healing.” The second case was attended with a fracture of the fibula a little above the joint, and was also left to nature; the skin sloughed on the 22nd day and exposed the astragalus. After four weeks the bone became loose and was removed, and at the end of five months the patient recovered.

In September, 1833, I saw a case treated by M. Dupuytren at the Hôtel Dieu of Paris. Two fruitless efforts were made at reduction, but he succeeded in bringing the foot nearly into its natural position. Six weeks afterwards the patient could use his limb. A small slough formed over the tumour sometime after the accident, but separated without opening the joint. This case has been published in the 13th volume of the *Journal Hebdomadaire*, where mention is made of two other cases treated by the same surgeon. In one of these the bone was easily reduced; and, failing in the other, he proposed its extirpation. This was rejected by the patient, who ever after moved about with “pain and difficulty,” the foot being greatly turned inwards. In the *Archives Générales*, for December, 1833, a fourth case of the same surgeon is alluded to that was left to nature; gangrene followed, and the man was cured by amputation of the leg. In the same journal a case of Professor Nanula of Naples is given, where the practice pursued by Desault of enlarging the wound in the capsule was followed, and the patient recovered with a good limb.

Dr. J. R. Barton informed me that he had seen two examples of simple dislocation of the astragalus at the Pennsylvania Hospital. One of these was in 1816, and being irreducible, was not interfered with. Inflammation came on after a short time, when the integuments sloughed and part of the astragalus was exposed; this, however, was

* Œuvres Chirurgicales, tom. i.

‡ Surgical Works of B. Gooch.

† Malad. Chirurgic., tom. iv.

§ On Dislocations.

soon covered by healthy granulations, and cicatrized. At the end of five months the patient walked and had good use of the joint, though great deformity of the foot existed, and he continued to be subject to ulceration of the newly formed skin on its outer part. In the other case, the care of which was also left to nature, gangrene took place soon after the accident and the man died.

Compound, though more frequent than simple, dislocations of the astragalus, are nevertheless sufficiently rare to make their notice a matter of some interest. Formerly they were thought to require immediate amputation, but a sufficient number of observations are now collected conclusively to prove that the limb may be saved, though it has generally been thought necessary to remove the bone. Indeed, in the majority of these cases, this is so much detached from the adjacent parts as to be unable to support its vitality, and will, if returned, produce all the bad effects of a foreign body introduced into a joint.

In asserting that compound are more frequent than simple luxations of the astragalus, I am well aware that it is contrary to the opinion expressed by our highest authority, Sir Astley Cooper. At page 327 of his great work, he says, "A simple dislocation of the astragalus sometimes, though rarely, occurs; a compound luxation is much more rare." The grounds for this opinion, which is likewise that of most surgeons, are not stated; but that it was not the result of his own experience, is shown by his reporting five cases of the accident attended with more or less laceration of the integuments, while he gives but two of its simple displacement. A comparatively large number of examples of the compound dislocation of this bone may be found scattered through surgical writings. Hildanus,* the first author who speaks with precision of these luxations, gives an instance in which it occurred and the patient recovered after the extirpation of the bone. Boyer† cites five cases, all terminating successfully. Desault‡ and Hey§ each report three examples of the accident, in all but one of which a cure had taken place. Sir A. Cooper, as just stated, mentions five cases occurring either in his own practice or that of his friends; in one of these the limb was amputated, and in another the bone was reduced, and all terminated successfully. M. Fallot|| has given a case attended with fracture of the surfaces articulating with the scaphoid and calcaneum, in which excision was performed with success. MM. Arnal and Velpeau¶ have recorded each a case terminating fatally; one fifty-two and the other four days after its removal.

* Opera. Cent. ii., obs. 67.

† Œuvres Chirurgicales, tom. 1.

‡ Journal des Progrès, tom. 1.

† Maladies Chirurg., tom. iv.

§ Practical Observations.

¶ Jour. Hebdomadaire, toms. i. and xiii.

In our own country several examples of the accident have been observed. The late Professor Wistar removed the astragalus in a case of compound dislocation, and the patient was cured with some motion at the joint. Drs. Stevens* and Gillespie† have recorded instances where the same practice was adopted with happy results; and in the No. of this Journal for May, 1827, Dr. Beatty has given an interesting case in which a cure followed, though the bone was preserved.

I recollect to have seen at the Pennsylvania Hospital a case where the astragalus was thrown completely out from the limb; the following brief statement of which is taken from the note-book of my deceased friend, Dr. Hammersly, at that time one of the resident physicians.

The patient, Isaac Lyon, æt. 22, was admitted on the afternoon of July 20th, 1829. He was of intemperate habits, and had received his injury a short time previous to being brought to the Hospital, by the falling of a pile of boards upon his leg. The ankle joint was laid open obliquely on its outer side for about four inches, and the external malleolus exposed. A bone that had been picked out of the soft earth upon which he had been lying, was handed to the doctor by a person who accompanied him, and proved to be the astragalus, with one of its edges broken off. There was no hæmorrhage from vessels of any size, there being only a general oozing from the part, and no other injury was received. The attending surgeon, Dr. Barton, saw the case soon after admission, and directed the sides of the wound to be brought loosely together with adhesive strips, and the limb to be placed in a proper position in a fracture-box, with just pressure enough on its sides to steady it. The patient did not complain of much pain, but was kept under the influence of anodynes.

On the third day enormous swelling of the limb, and a crackling sensation upon pressure over the tibia, existed; the whole leg and inside of the thigh were of a copper colour, and some bloody vesicles had appeared around the ankle and upon the inside of the leg; countenance shrunk; pulse 140, and wound discharging a thin ill-conditioned pus. The treatment consisted in the free use of opium, stimuli, and nourishing soups; poultice to wound and lead-water to the limb.

On the morning of the fifth day he was unable to open his mouth freely, and his head was at times thrown back forcibly upon his pillow. These tetanic symptoms increased in violence, and towards night became general; and he lingered on in the greatest agony till the evening of the 27th.

* N. Y. Med. & Phys. Journal, No. 20.

† Amer. Journal, Aug., 1833.

ART. IX. *A case of Enlargement of the Thymus Gland, attended with unusual symptoms, and terminating fatally.* By WILLIAM C. ROBERTS, M. D., of New York.

A stout coloured child, eight months old, had laboured for three or four days under a slight bronchitis, for which no medical aid had been requested. On the day of his death he was so much better as to be left under the care of his sister, by his mother, when she went to her work. Previous to going she lighted a small portable furnace, filled with hard coal, by means of some charcoal, and placed it under the grate in the room. At 10, A. M., the child was seen by its father, apparently well. About 2, P. M., it was heard by some neighbours to groan heavily. When they visited it, it was found pale, cold, faint, livid under the eyes, with froth upon its lips, in the sister's arms. The door and windows of the room were closed. The smell of the coal gas was very offensive, even after the room had been for some time ventilated. The child was rubbed with vinegar, and revived, and I was sent for. The reaction must have been rapid, for when I arrived, in a few moments, the following was its condition. It was lying with the head thrown back in a friend's arms. The skin was hot and dry; the pulse excessively frequent, the respirations 70 per minute; the alæ nasi in rapid play. A subcrepitous rattle was heard all over the chest with every respiration; and with every expiration a short groan was emitted. There was no cough; respiration was visibly effected, both with the ribs and diaphragm. The look was anxious; now and then the child's eyes were turned upwards, and it was thought by the by-standers to be convulsed; of this no other evidence existed. The brain, feeling like a soft tumour, was elevated to a very considerable height at the anterior fontanelle with each respiration; and it pulsated strongly, imparting to the ear, through the hand, the idea of a harsh thrilling. The pulsation of the heart was to be felt on both sides of the chest, and in the belly; the beating of the aorta was so strong as to convey the idea of its being in an aneurismatic condition. The child often rubbed the back of its head on the pillow, and frequently made an attempt to sit up, but directly fell back again. Being fully convinced, from coupling the existing symptoms with the previous history of the case, that it was one of pneumonitis infantum, of great intensity, which I had to treat, I immediately bled it, placed it in a warm bath, and administered the vin. antim. with a view to produce vomiting and relaxation: the former attempt failed; the latter succeeded in inducing free diaphoresis. Sinapisms were then ap-

plied to the calves of the legs, and to the back of the chest; and after an untoward delay of nearly three hours, six leeches were applied on its anterior surface. They filled well, but the bites bled very little after they had fallen: calomel and pulv. antim. were now given, but very shortly after, the feet of the child began to grow cold, and it expired rather suddenly, with a slight spasm, at half past eight o'clock, and within seven hours from the first observation of its complaints.

I have since learned that although this infant had never any thing like a paroxysm of dyspnœa, there were times during its life, when he showed symptoms of difficulty of breathing, opening his mouth and seeming to gasp for air. In the language of his parents, he was "phthisicky," and exceedingly liable to colds on slight exposure. It had cut no teeth, nor were any at hand.

Autopsy at 2, P. M., on the following day, assisted by my friend Dr. George W. Hodgson. Sound of the chest dull. On removing the sternum and cartilage, we were instantly struck with the uncommon size of the thymus gland, which extended from above the sternum to below its lower end, and laterally, far into either side of the chest. It was dissected off from at least one half of the pericardium, which it overlapped, and from a corresponding extent upon the right lung. It was of a purplish colour, consisted of two large lateral (*b, b,*) and two short cervical lobes (*a, a,*) and contained a milky fluid. In its greatest width and length, it increased three inches: nearly half an inch in its greatest thickness. Just after removal from the body, it weighed eight drachms and four grains. (See fig. p. 387.)

The lungs are perfectly healthy, admitting of complete inflation, being universally crepitating, not even congested, as is usual after death, and floating in water, with the heart attached. The bronchi contained a very little reddish froth, and presented some patches of arborescent redness, indicative of very trifling irritation. The right side of the heart contained coagula of very black blood. The cause of death appearing to have received a satisfactory explanation, the abdomen was not opened. The brain was, however, examined, and found free from disease in all respects; it contained no serum; the superficial veins were filled with black blood.

The papers of Dr. Montgomery of Dublin, and of Drs. Hirsch and Kopp in Germany, so fully analyzed in this Journal for February, 1837, have directed the attention of the profession to the fatal suffocation which is caused by enlargement of the thymus gland in children. But the cases they have described differ altogether from that which I have now related. The "thymic asthma" they portray is a chronic affection, evidently spasmodic, and consisting of periodical

paroxysms of dyspnœa. The disease under which the subject of my narrative laboured, was attended with great vascular excitement, heat of skin, frequency of pulse, pulsation in the chest, belly and head, &c. In this respect, and in the present state of my knowledge on the subject, I think it peculiar, and I venture to hope it will not be thought uninteresting. If I am correct in supposing that it simulated pneumonia, it will establish a new diagnostic indication; and the condition of the thymus will merit a careful examination in future autopsies. The pressure exerted by the gland in this case, was chiefly within the chest, and by the lateral lobes upon the lungs and the heart. The cervical ones were short, and probably exerted little compression upon the nerves of respiration. Neither was the trachea much pressed on, and hence, probably, the reason why the symptoms resembled more those of pulmonary congestion, in which disease vascular excitement always runs high, than those of suffocative asthma, such as has been hitherto described. The perfectly healthy condition of the lungs and brain which was met with, is not without a parallel. In one of Dr. Hirsch's cases, indeed, the lungs were gorged with dark red blood, as in asphyxia; but in that of the child of Dr. Eck of Berlin, mentioned by Haugstedt, who died of thymic asthma, the heart and lungs and air passages were healthy, and no effusion existed in the brain. In a like case cited by the reviewer of Haugstedt's work, (*Thymi in homine*, Copenhagen, 1832,) in the *Med. Chir. Rev.* for July, 1834, the gland in a child aged eighteen months weighed three ounces, and was four inches long; yet "the abdominal and thoracic viscera were found to present a most healthy appearance, and no trace of any cerebral disease could be detected." It is worthy of remark that the patient suffered very little from dyspnœa during life; but in Haugstedt's treatise we find it stated that in a case in which the thymus had attained the enormous weight of five ounces, and caused a fatal hydrocephalus, no dyspnœa had been induced. So also in a case by Rust, (*Mag.* 1826,) ending in a sudden suffocation, (the gland being only one and a half inches broad;) excellent health had previously been enjoyed.

In few of the cases recorded has the thymus gland attained to greater size than in that which I witnessed. Dr. Montgomery met with one which, although he did not weigh it, he is sure "weighed at least two ounces." It was three and a quarter inches long, nearly three inches in breadth, and fully three quarters of an inch in thickness. Dr. Kommaul speaks of one which weighed fourteen drachms. Dr. Van Nelson of one which weighed nine drachms. Dr. Hirsch of one of nine and a half drachms weight. Dr. Hirsch thus remarks: "The

most prominent feature in the post-mortem examinations was the appearance of the thymus gland. In one case it might have been mistaken for the lungs, it was so thick and hypertrophied; it extended from the thyroid gland to the diaphragm, was *two inches wide, weighing more than an ounce.*" The gland which I possess, weighed, just after removal, *one ounce and four grains.* Its greatest length and breadth were three inches, and at the thickest part fully half an inch.



It consisted of two large lateral (*b, b,*) and two short cervical lobes (*a, a,*) was of a pale purple red colour, healthy in consistence, the cellular in-structure containing a milky fluid. In the fifth plate in Sir A. Cooper's work on the Anatomy of the Thymus Gland, fig. 14, is the representation of a thymus "from a large child of *four months* old, the weight of the two glands being *forty-five grains, which is two hundred and forty at birth.*" That of which I speak, taken from a child of *eight months*, very far from having undergone a further and proportionate reduction, weighs, at that later period of existence, four hundred and eighty-four grains.

In order not to swell this paper to an undue length, I shall abstain

from any speculations as to the influence of the vapour of the coal in causing a sudden distension of the previously enlarged thymus in this case. I may, however, in conclusion, observe that the cause assigned by physiologists for the elevation of the brain during expiration, viz. the greater resistance which the blood experiences in its passage through the lungs while in the state of expiration, by which a stagnation is brought about in the right side of the heart, and consequently a retention of blood in the veins, which produces an increase of bulk in so vascular a part, is in favour of the view which I take, that the violence of the symptoms was owing to the compression exercised by the enlarged gland upon the lungs. The great height to which the brain rose, and the alternate subsequent depression, shows how great was the obstruction offered to the venous circulation in them. The heart laboured unduly to overcome not only this obstacle, but the pressure suffered by itself, and the death of the patient is attributable to the embarrassment of the functions of parts so vitally important.

New York, June, 1837.

ART. X. *Case of Cancer of the Stomach, with calcareous concretions in the left lung.* By GEORGE O. SUMNER, M. D., of Hartford, Connecticut.

Mosès Perkins, the subject of the following case, was born at Groton, Connecticut, in 1786. He was of a very robust constitution and possessed a degree of resolution amounting to foolhardiness. He exposed himself from his youth to all sorts of hardships; would sleep on the damp ground, and exert his strength on occasions to the utmost, &c. Some of his foolhardy acts the reader will, perhaps, be slow to believe; but I record none but such as I have satisfied myself by particular and minute inquiries to be strictly true. He would eat *living earth-worms*—at one time he ate a gill or more of them at a meal: he would swallow, on wagers, rotten eggs, and eggs with chickens in them, &c.: and, however incredible it may seem, he at one time actually swallowed a *streaked snake alive!* this latter he disgorged by immediately drinking half a pint or a pint of *raw rum!* This act took place ten or fifteen years before his death.* Formerly Perkins fol-

* This is stated on the testimony of respectable eye-witnesses. The opinion of the by-standers seemed to be, however, that Perkins did not intend to swallow the snake: but they state that having caught the reptile, he held it up to his own

lowed the seas for several years. He was a great boxer, and when in his prime, it was frequently said of him "that he had rather fight than eat." In his rows he was often severely beaten and bruised. Some twelve or fourteen years before his death, his left hand was severely injured in blasting rocks: and in the summer of 1828, while engaged in the same employment at Bridgeport, in this state, the same hand was so severely injured by another blast, as to render amputation necessary; which was performed by Dr. Samuel Simons of that place. For the two or three years previous to 1828, his health had been slowly failing; and after the injury of his arm, his failure seemed to be somewhat accelerated. With other complaints, constituting this failure of health, he had been troubled for some time with a defluxion of a nauseous fluid from the posterior nares, and a relaxation uvulæ: these latter complaints he called (and perhaps properly) *catarrh*, and for them he had taken various stimulating snuffs. I do not know that he ever had any syphiloid affection. I might have mentioned before that he had been for years a man of decidedly intemperate habits—in the sense of the term used before the golden days of the temperance reformation.

Perkins first applied to me for medical assistance on the 3d of August, 1829. At that time his skin was very yellow, and there was manifest biliary derangement. He was costive and quite feeble. I prescribed for him as follows: *R. aloes; rad. rhei.; hydrarg. chlorid. mit. (calom.) āā gr. i.; sap. cast. gr. ii.; ft. pil. i.;* one or two in the twenty-four hours, or sufficient to remove the costiveness and regulate his bowels. After taking a few of these pills he became much better; his countenance improved, and he said he had not felt so well for years.

He continued better for some weeks, but at length began to lose ground, and on the 19th of October I was sent for, and found that he had been attacked with hæmatemesis, with great pain in epigastrio, and vomiting a pretty large quantity of fresh blood; this last had occurred after turns of violent and long-continued coughing. The blood, though fresh, was entirely without froth; and, under all the circumstances, especially in the sequel of the case, I was constrained to think that the blood was discharged from the stomach, and not from the lungs. There was also a spasmodic affection of the abdomi-

widely-distended mouth, and asked his comrades what they would give him if he would swallow it. The poor snake, wriggling to get away, slipped through Perkins's hands and down his throat in an instant. For once, they said, Perkins now seemed intimidated; but, immediately seizing the rum jug, he drank off a large quantity of the liquor, vomiting followed and the snake was ejected.

nal muscles, drawing the portion of muscle on which it operated up into the form of a *ball*, and shifting from one to another portion of muscle.

I gave him tr. opii and tr. ferr. muriat. combined, as anodyne and styptic, and applied an epispastic a little to the right of the epigastrium—afterwards spermaceti and arrow-root jelly as emollient and soothing remedies. I think he had no return of hæmatemesis, but he continued to be the subject of much pain and great debility, and for many days his recovery seemed problematical. For anodyne he took pulv. ipecac. et op. and spts. ether. nitric., with occasional doses of tr. opii. His bowels were costive, and had to be moved every day or two by mild cathartics, as ol. ricini, salts, or mild pills. At length he began slowly to convalesce, and on the 11th of November I discontinued my visits. For a few days previous to my leaving him, I had given him moderately of a mild bitter infusion. He emaciated very much during this sickness.

He was poorly through the succeeding winter, but by dint of good resolution, which never for a moment forsook him, kept about, and attended a grist mill, situated across a cove, and distant a quarter of a mile from his house: he often, however, had to be transported in a boat to and from his house and mill. He got rapidly worse the last of March, 1830, and after he had held out as long as possible, he sent for me.

I found him, March 28, with strength very much prostrated, great emaciation, total loss of appetite, almost total inability to keep food or medicine on the stomach, and costive. There was a small *tumour* situated in the region of the pyloric orifice of the stomach: this tumour was quite sore, and was occasionally the seat of severe pain, the sensation of which he compared to that from being cut with a knife. It struck me at once that here was cancer of the stomach. I applied an epipastic over the tumour, and gave ol. ricini as a cathartic—likewise a pill of ext. hyosciamus gr. ii., calom. gr. $\frac{1}{8}$, two or three of these pills in the twenty-four hours. After a day or two, sickness at stomach nearly subsided, and some little appetite for some kinds of food was experienced. The pain in his stomach also abated, (more indeed than could have been expected as the effect of the medication,) and never returned with any severity: soreness of the tumour continued. After taking six or eight of the hyosciamic pills, they affected his head and sight so much that their use had to be suspended. Laudanum had generally to be given at bed-time, and castor oil to be freely used as a cathartic. His skin, as last fall, was exceedingly yellow, and his strength all gone—could not sit up a moment.

April 21st. I found him very low, and in addition to the previous symptoms, there was a *tumour* at the angle of the jaw on the right side, which was very sore; and there was a watery swelling of the left foot which continued to extend till it reached the trunk. The tumour on the jaw spread down the neck and up the cheek, was very sore, and somewhat painful, and considerably impeded deglutition. Little was done for the unhappy man after this, except to give him an injection every day, and wine to yield him some support. Saturday, April 24, at about 1, A. M., he died.

Dissection the afternoon after death. From peculiar circumstances I was unable to obtain the presence of any medical gentleman.

The abdomen was opened in the usual way, by two divergent incisions carried down from the lower end of the sternum. The *omentum* was mostly adherent to the subjacent parts. The *liver* appeared pretty natural in size and texture, but was uncommonly yellow. The gall bladder contained rather more bile than usual. The pylorus to the extent of one or one and a half inches was much thickened and indurated: to the feel and also to the knife this diseased portion had almost the firmness and hardness of cartilage. Its inner surface was studded with firm and hard prominences, which stood out into its cavity: not much ulceration upon it—some, however, as I took up flakes of matter which were very offensive to the smell. A firm adhesion had taken place betwixt this diseased part of the pylorus and that portion of the left lobe of the liver naturally in contact with it.

The remainder of the stomach was not examined very particularly, but nothing unusual in regard to it was observed.

On opening the thorax there was nothing very striking in the appearance of the external surface of the lungs; there was less floridity, however, and a somewhat more withered aspect to those organs than is common. But the most remarkable appearance here, and doubtless in the whole body, was this: *in the left side of the thorax were portions of an apparently bony substance, imbedded in the lower part of the lung of that side:* these portions being taken out, weighed, undried, seven ounces, avoirdupois. This bony substance was not found exactly in a solid lump, but the portions of it grew near each other, and some of the lumps would have weighed three or four ounces: indeed, I broke the substance up considerably in removing it, and cannot tell how large a piece might have been formed before removal. The left lung was firmly adherent to the diaphragm, and so were some of the concretions: this lung also adhered considerably to the parietes of the chest; so did the right lung, but not as much as the left. There was no osseous matter in the right lung.

On examining the concretions more minutely, I found each lump composed of portions of, apparently, *bony matter*, cemented together by portions of a *white, fatty substance*; the proportions of these constituents varying in different lumps. The bony portions had the cancellated structure of the spongy bones, and nearly the same degree of firmness with the lighter spongy bones.

The *heart* was only examined by feeling with the hand—nothing unusual was in that way discovered. Owing to the lateness of the hour, and reluctance on the part of the deceased's friends, no farther examination of the abdominal viscera, or of any other part, was made.

I may remark that the swelling of the leg nearly subsided after death.

Hartford, Ct., 1837.

R E V I E W S .

ART. XI. *General Therapeutics, or Principles of Medical Practice; with tables of the chief remedial agents and their preparations, and of the different poisons and their antidotes.* By ROBLEY DUNGLISON, M. D., Professor of Therapeutics, Materia Medica, Hygiene, and Medical Jurisprudence in the University of Maryland; formerly Professor of Physiology, Pathology, Obstetrics, and Medical Jurisprudence in the University of Virginia; one of the Physicians to the Baltimore Infirmary, etc. Philadelphia: Carey, Lea & Blanchard. 1836. pp. 580, 8vo.

The successful compilation of an elementary work, on an extensive and constantly progressive science, is always a very difficult task. Such a work ought to embrace, within limits of reasonable extent, in well defined and strongly marked outline, the great boundaries and the minor subdivisions of the whole subject treated of. It should present this subject to the naked eye of the learner, in its natural colours and proportions, without the intervention by the author of any refracting or distorting media of his own composition. It should tell the truth, and nothing but the truth, although it may be unable to tell the whole truth. It requires, on the part of its author, a rare combination of high and various qualities. He must be familiar with the whole past history, with the actual condition, and with the future prospects of the science which he teaches. He must see, not in dim and shadowy vision, but in the sober certainty of clear and open light, its multiform relations to its kindred sciences. He must understand its errors, past and present, as thoroughly as he does its truths. Then he must have a sound mind, with its powers harmoniously balanced, if possible; and if not in perfect equipoise, with the cautious and doubting tendencies preponderant. There must be no crotchets in his brain; he must be no keeper or rider of hobby-horses. With the power of fully comprehending his subject; of distinctly distinguishing, in his own consciousness, the true from the false, and the doubtful from both; he must, furthermore, be master of the art of presenting the clear and luminous conceptions of his own mind, clearly and luminously, to that of his reader. He should have the excellent faculty of adapting his form of words to the nature of his subject, seeking always the ornament of simplicity, directness and order; eschewing meretricious finery and pedantic stateliness of style, and avoiding also tameness, sleepiness and obscurity. Especially should the compiler of an elementary work, on any department of practical medicine, be possessed, in addition to the foregoing qualifications,

of a healthful and sensitive conscience. He should be no respecter of persons. He should be a medical cosmopolite, with no party prejudices or local attachments. He should see and feel the nature and extent of the responsibilities under which he acts. He comes forward as the official oracle and teacher of the young physician. His readers are chiefly from amongst this portion of the profession. They imbibe from him their doctrines, they follow his precepts; and since no less than the lives and health of their patients are the things at issue, it is all-important that the doctrines should be sound and the precepts true which are to be the basis of their practical conduct.

There are some reasons why a correct and comprehensive elementary treatise on the materia medica and therapeutics should be more difficult of execution than a similar work on most of the other branches of medicine. The improvement of the materia medica and of therapeutics has not kept pace with that of the other branches. They have been comparatively neglected. There has been less of rigorous, systematic observation devoted to them than to other portions of our science. The leading minds in our profession during the present century have been directed more particularly to pathology, physiology, &c., and to certain limited portions of therapeutics and materia medica connected with certain symptoms of pathology and practice. It is vastly more difficult than has generally been supposed, or than most of us are even now willing to admit or believe, to ascertain the actual and precise value of any given article or course of treatment, even in any one given disease; and the evidence upon which this value rests is in very many important instances exceedingly slight and doubtful. There is less positive knowledge on this subject than on most others in medicine. For these reasons, and for others which might easily be given, we repeat, that the satisfactory execution of a work such as we are now speaking of, must be a very difficult matter. That a work of this character was much needed amongst us before the publication of the book, the title of which stands at the head of this article, we are well aware; we think it as much needed at present as it ever was. The grounds of this belief will appear in the course of the following pages.

The first chapter of Dr. Dunghlison's treatise is devoted to "General Principles," in which the following subjects, of very various character, are more or less fully discussed, to wit:—Therapeutics defined; instinctive action of recuperation; importance of bearing it in mind in the treatment of disease; cure by sympathy; expectant medicine; efforts of nature; crises; medical experience; science of medicine demonstrative; pre-eminence of therapeutics; therapeutical indications vary with medical theories; necessity of discovering the pathological lesion; rational therapeutics founded on rigid physiologico-pathological deduction; importance of discovering the cause of the lesion; etiology obscure.

It is not our purpose to make the present notice consist exclusively of a running commentary on the successive subdivisions of Dr. Dunghlison's book; neither do we intend to make the title of the work a

mere text for a therapeutical sermon of our own—an occasion solely for the setting forth of our own individual views or opinions on this branch of medical science. It would be quite impossible, from the nature of the work itself, to present our readers with any thing like a full and profitable abstract or summary of its contents, in the form of an analytical review, without far exceeding the limits suited to a paper like the present. But while we shall endeavour to furnish our readers with a general knowledge of the work under notice, we shall also be obliged, in order that our criticisms of certain of the author's leading doctrines and opinions may be rendered intelligible, to state somewhat fully, and as explicitly as we are able to do, our own views on these subjects.

In the study of any one separate portion of a great and complex subject, a first and most important inquiry must refer to the nature and extent of the relations between this and the other several portions of the entire subject. The science of medicine, taken as a vast, comprehensive, and integral whole, is made up of many other sciences; each of which occupies its own appropriate section of the large and perfect circle, wears its own individual features, and accomplishes its own peculiar ends; and each of which is, also, more or less intimately, and by relations more or less direct, connected with all the rest. Certainly, it is important, in order to understand with any satisfactory degree of clearness the chief science itself, that we should have a correct conception of the mutual dependencies, and the bearings upon each other, of the subordinate parts of which it is composed. The only relations, however, which it is our intention to notice here are those existing between therapeutics and pathology. The end of therapeutics—its sole, exclusive end—is the removal or mitigation of disease; and for this or some other reason, it seems to have become an axiom in medicine, that therapeutical indications must always be deduced, directly and immediately, from pathology. So, Dr. Dunghlison, in his preliminary chapter, following in the old track, which has been trodden by all the pathologico-therapeutical systematists, asserts and maintains the same principle. “In all these cases,” he says, “as in every other, rational therapeutics must be founded on rigid physiologico-pathological deduction.”

We shall take some pains to show that this immediate and intimate dependence of therapeutics upon pathology does not exist. That there is a near and close relationship between these two capital departments of medical science, we readily admit; but we do not believe its nature to be such as it is generally stated to be. Therapeutics does not flow directly from pathology. The word *deduction* is not the link which binds the former to the latter. No therapeutical indication can be inferred, directly, and without the intervention of some other aid or agency, from any known pathological condition. No remedial measures can be based, originally and exclusively, on a simple knowledge, however exact and certain, of the seat, degree, or nature of a morbid action. This, at any rate, is the general rule. We

might, indeed, in a few cases, independent of any aid derived from experience, infer with a reasonable degree of probability, the appropriate remedy. But these cases, on close examination, would be found to be composed mostly of lesions where the indication consisted merely in the removal of an obvious cause. The first man, who ever suffered with a splinter of wood under his finger-nail, might very properly come to the conclusion, that the withdrawal of the splinter would be the first and surest means of removing the pain, although this therapeutical indication had not been taught him by his own experience or by that of others. We may suppose, that pathology had explained to us the condition of an organ suffering with recent acute inflammation. Looking at the undue activity of the circulation, and the great distension of the blood-vessels, we might, perhaps, be led by simple, unaided, *à priori* reasoning to the abstraction of a part of the superabundant blood. So we might, in the same manner, regarding the unusual heat of the part, where this could be ascertained, resort to the application of cold. But with these, and some few other analogous exceptions, we do not, and we cannot, deduce our therapeutics from our pathology. The case seems to us almost too plain to be argued, and yet nothing is so common as the contrary assertion. We are constantly told that the great essential prerequisite to the successful and rational application of remedies, is a knowledge of the seat and nature of disease; that the latter once clearly settled, the former follows as a matter of course; that the one *depends upon*, and *rises out of*, the other. The necessity of this knowledge, so far as it is attainable, we admit; but we deny the soundness of the reasons on which this necessity is usually placed.

Talk about it as we may, therapeutics is an art resting solely on rational and philosophical empiricism. We are often, it is very true, obliged to resort to remedial measures in the treatment of diseases, the seat, nature, and complications of which are more or less novel or obscure; which may, indeed, be such as have never before been manifested in the living organization. Here we are, to a certain extent, driven to the shelter of analogy and to *à priori* reasoning. So far as the pathology in some of its elements, or in their aggregate combination, resembles other morbid states with the treatment of which we are already familiar by direct experiment, so far we transfer, rightly enough, the same views and the same treatment to the new malady. But let us not deceive ourselves even here. Our *à priori* reasoning is itself acting under the guidance, uncertain though it be, and walking in the light, feeble though it be, of experience; and the first steps of our treatment are wholly tentative. There may exist some new, and as we had supposed, perhaps, an unimportant and subordinate element in the series of morbid phenomena, constituting the new disease, the presence of which may render the treatment *indicated* by analogy entirely useless, or worse than useless, and experiment may finally demonstrate the necessity of an opposite mode of management.

We have alluded to the stress which the systematic therapeutists of the day put upon a knowledge of the *nature* of the morbid affection,

as preliminary to its successful treatment. But what do we know of the nature of disease? What two leading pathologists are agreed on this single point? What is inflammation, that every day disease, always before our eyes and under our hands? Is it the same *ipse morbus* in every organ, in every tissue, during its successive periods, and under the all-controlling agency of varying epidemic influences? Does any knowledge, that we may profess to have of its nature, direct us in its management? On the contrary, do we not often find it yielding under certain conditions to one course of treatment, and under certain other conditions, to an apparently opposite one? Is phlegmonous erysipelas arrested by the same means that will cure acute inflammation of the knee-joint? Will a solution of nitrate of silver, dropped into the eye, relieve a conjunctivitis of six hours standing, arising from the presence of a grain of sand? Will the purulent ophthalmia, where there is less redness, perhaps, less local suffering and less constitutional disturbance than in the slight affection, just mentioned, give way to a few leeches and a mucilaginous lotion? Our knowledge of the most efficient treatment of inflammation is the single, direct result of naked, unaided experience. Our knowledge of the appropriate treatment of the almost infinite forms and modifications of this morbid state is, also, the simple, direct result of naked, unaided experience. Having ascertained, by experimental researches, the most effectual method of controlling inflammation, when seated in a certain tissue or organ, or occurring under any given circumstances, the logic of analogy might have led us toward the true treatment of a similar morbid condition, existing under more or less similar circumstances; but this same logic might, also, have led us to the worst possible treatment. And this is true of all diseases. Who ascertained and demonstrated the relationship between mercury and syphilis? Was it scholastic PHILOSOPHY, now in robe and slippers, meditating apart and alone, in her quiet closet; now aloft on her airy wings, piling up and adorning her gossamer castles in the sky; or was it EMPIRICISM, that humbler handmaid of our beneficent art, with her senses always awake and her fancy asleep, or obedient ever to the voice of her reason, and with no *muscae volitantes* swimming before either her bodily or her mental vision? Could PATHOLOGY, poring over the essence of the venereal virus, and studying the nature of the morbid action which its presence excites, even if she could have ascertained these things a thousand fold more perfectly than she has yet done, have ever led us, *by induction*, to the appropriate antidote and remedy? Whence came our knowledge of the action of cinchona in intermittent fever? Wherein consists the resemblance between this substance and arsenic, that should have led us by *à priori* reasoning to the use of the latter in the cure of the same disease? How is the most successful treatment of typhus fever to be ascertained? Is it by *deductions* from its *pathology*? The morbid alterations in this disease, their successions and dependencies, have been very thoroughly investigated. The condition of the suffering organs is very satisfactorily known. The relations between the external manifestations, or

symptoms, and the organic lesions, is pretty well settled. The natural history of the disease is in a fair way of being fully completed. Its specific characters are made out, so that it is easily and certainly recognised. One of the essential elements of its pathology consists in a morbid alteration of the glandular bodies of the small intestines, and of the mesentery; an alteration which we call inflammatory. Knowing this, can we thence *infer* the most appropriate treatment? Most certainly, we cannot. The pathology of true typhus is now as fully and as positively known, perhaps, as that of any other disease, so complicated in its pathology as this. Can we now *deduce* its proper treatment from its admitted pathology? Most certainly, we cannot. This treatment is yet to be discovered. At the outset of our therapeutical researches here, we might, indeed, if we had no better guides, listen to the suggestions of analogy. But let us beware of that logic which teaches us to place implicit faith in the seductive promises of an over-confident, generalizing, and systematizing philosophy. The question, which we are called upon to solve, in the case of this disease, and of all other diseases, is, not whether this remedy or this method is a rational or a philosophical one; not whether it is in accordance with our notions of the pathology of the disease, but whether it is or is not a successful one. What matters it whether our treatment be antiphlogistic or incendiary, expectant or perturbing, if, by it, we save our patients from suffering and death?

We shall, probably, be met here with the old objection, founded on the difficulty of applying this test. But the difficulty of its application does not prove that the test itself is not the true one. Dr. Dunghlison says.

“It is obvious, that, *cæteris paribus*, therapeutics should be the touchstone of medical skill: the number of cures ought to decide the qualifications of the practitioner; but it so extremely difficult—nay, impossible—to estimate all the deranging influences;—so many modifying circumstances are perpetually occurring, that we cannot decide that any two cases are precisely identical. Hence we can never judge of the comparative success of different practitioners, on which so much stress is placed—and placed erroneously—by the public. Owing to these difficulties also, we have such a diversity of sentiment regarding the treatment of the same affection.”

We are not prepared to assert that the *public* are justified in judging of the merits of a practitioner by his apparent success. So far, indeed, as the opinion contained in the above extract refers to the public, it is undoubtedly correct, and this for plain and obvious reasons. But we do assert, that the real value of a remedy, or of a method of treatment, in any given disease, and of all remedies and of all methods of treatment, in all diseases, must be judged by their actual and relative success, and by this alone. The “deranging influences,” and the “modifying circumstances,” which are perpetually occurring, will, to be sure, prevent us from deciding that any two cases are precisely alike. We may be very sure, that no two cases ever are precisely identical. But still these “influences,” and these “circumstances,” constituting, as they do, the difference between different cases, are none the less susceptible of being studied and *appreciated*.

It is this very appreciation upon which, in part at least, our diagnosis rests. Their importance as disturbing causes can be ascertained and estimated. And it must be ascertained before the natural history of the disease is fully made out. They constitute as much a part and parcel of this history as do the most essential morbid alterations, or the most prominent and invariable symptoms.

We are quite willing to go as far as Dr. Dunglison goes in insisting on a thorough knowledge of the seat and nature of the morbid lesion, so far as these can be ascertained, as an indispensable pre-requisite to an enlightened and successful practice. But this preliminary knowledge is essential only as an element in our diagnosis; it is of service only so far as it helps us to recognise the individual morbid condition with which we have to deal, and so to identify it, more or less perfectly, with the same condition whose relation to certain remedies and modes of management experience has already pointed out to us.

It is a little remarkable, that a work which founds so much of its claim to excellence and authority on the importance which it gives to pathological knowledge as the only safe basis of therapeutical indications, and which is the production, too, of a distinguished and experienced compiler—of a man who must be supposed to be even, at least, with the progress of medical science—should exhibit, so frequently as it does, evidences of an erroneous or doubtful pathology. On page 90 we have the following explicit and unqualified statement: “Phthisis pulmonalis is a chronic inflammation of these organs, (the lungs,) ending in suppuration and disorganization.” At page 109 it is asserted that laughter is a *not unfrequent* exciting cause of apoplexy. At pages 186 and 187, Dr. Dunglison speaks of a patient of his own, affected with hæmatemesis and *dropsy of the lower belly*. In some observations on the use of emetics in whooping-cough and asthma, page 221, Dr. D. says:

“Both these diseases are dependent upon a morbid condition of the nerves of the respiratory organs—the pneumo-gastric especially—which modifies the contractility of the muscular fibres, that surround the minute bronchial ramifications; and this state of the nerves is generally perhaps connected with more or less morbid derangement of the parts of the cerebro-spinal axis, whence the nerves originate.”

It must be gratifying intelligence to the laborious pathologists of the old world, as well as to those of the new, that the pathological problem of these two affections, especially of the latter, has been, at length, after so much investigation, and amid such widely differing opinions, so satisfactorily and positively solved. We might cite many other instances similar to these, exhibiting either loose views of pathology, or a reprehensible carelessness of phraseology in stating them.

We have thought it proper to state our views on this subject at some length, because we believe them to be not only true, but also of some practical importance; and because the author of the work before us inculcates so earnestly doctrines of an opposite character.

It is difficult to say whether medicine has suffered most from a

partial and one-sided observation, or from premature and hypothetical generalizing—from false facts or from false reasoning. The latter is the legitimate offspring of the former; and although each may very well exist without the aid and presence of the other, they are very commonly found together. We deceive ourselves when we boast, as we are so much in the habit of doing, of our discipleship to the true Baconian philosophy—of our faithfulness to the rules of cautious, impartial observation, and to the strict principles of an upright, a rigorous, and a single-hearted logic. Before our science can take its proper place by the side of the other sciences, and confer that benefit on humanity which it was intended, and which it is able to confer, it must endeavour to become in truth what it has, indeed, long professed and claimed to be, a demonstrative science. Its cultivators must begin to practice what they have so long been preaching. The standard writers of the present day, on therapeutics and materia medica, are constantly indulging in what they may deem very philosophical, but in what seems to us very fanciful, *explanations* of the intimate and peculiar action of medicines on the living tissues with which they come in contact, or which they may affect more remotely. More pages are often taken up with elaborate disquisitions on the hidden, mysterious, and utterly unascertainable *modus operandi* of a remedy or a class of remedies, than are given to the therapeutical properties and uses themselves of the article or the class.

Dr. Dunghlison's book, like nearly all others upon the same subject, is overburdened with these attempts to explain this precise and intimate *modus operandi* of medicines. The action and operation and effect of every article must be accounted for pathologically, physiologically, philosophically, rationally. It is astonishing to witness the pertinacity, activity, and ingenuity of this "*detestable mania for explanation*," as the authors of a recent and excellent French work on materia medica and therapeutics, call it. It is not enough that any given medicine or mode of treatment *cures*. This knowledge would be mere empiricism, unworthy altogether of the scientific physician. We must know *how* it cures, and *why* it cures; and unless these things are made out, we are bound to believe that it does not cure at all; that we have been mistaken, and that the two circumstances of the use of the remedy and the cure, which simple observation had taught us sustained to each other the relation of cause and effect, must have been only accidentally so connected. If any one circumstance exhibits more strikingly than another the folly and absurdity of this passion, it is that of the multifarious and contradictory explanations that are continually and successively invented and maintained. There is hardly a page of Dr. Dunghlison's book which does not contain more or less paper, spoiled, and worse than spoiled, by magisterial and confident statements of these *hows* and *whys* and *wherefores* of pathology and therapeutics. Does any one doubt this? Then let him study the book for the purpose of settling this particular point; and when he comes upon an explanation, let him inquire whether it is anything more than a conjecture. We will illustrate our remarks

by one or two examples, taken almost at random. At page 81, the author, in speaking of the difficulty with which absorption is accomplished in malignant cholera, and in other diseases of the gastro-intestinal mucous surface, says, "It is on this account, also, that there is frequently so much difficulty in affecting gastro-enteritic patients with mercury." The reason here given, so confidently, and so much as a matter of course, why the system is not affected by the mercury, may be the true one, or it may not be. Do we really know anything beyond the fact, that in certain morbid states of the body it is difficult or impossible to produce the specific effects of mercury? Certainly we do not. Again, antispasmodics are such, according to Dr. D., only through their revellent or derivative operation. He says, at page 382, that direct antispasmodics are revellents only, "acting by virtue of the new impression they make on the gustatory or gastric nerves, and thus deriving from the inordinate action going on in some other portion of the nervous system." Now, as we said before, and as we readily admit in all these cases, this may be true; but we say, also, in this case, and in all the others of a similar kind, that it may be false; and we say, furthermore, both in this case and in the others, that the chances are in favour of the latter contingency. Is it at all unreasonable, or unscientific, or improbable, to suppose that there are substances which allay spasmodic action by a direct, immediate operation on the unduly and irregularly excited organs and tissues? Are not observation, analogy and sound reasoning all in favour of this supposition? If the acknowledged antispasmodics act only by their revulsive agencies, it must even then be admitted that there is something peculiar and specific in the *nature* of the revulsion which they occasion, so that, after all, this hypothesis does nothing towards simplifying our notions of their *modus operandi*. We do not wish to be understood as asserting, positively, that there are any such medicines as simple, direct, absolute antispasmodics, controlling inordinate and irregular muscular contraction by an immediate influence on the nerves going to the disturbed muscles, and without the intervention of any other modification or influence upon any other tissue. We do not say this for the simple reason, to us always a good and sufficient one, that there is no conclusive evidence that such is the case. We only say, that this proposition is quite as reasonable in itself and quite as likely to be true as that of Dr. Dunghlison.

Passing over our author's second chapter, which is devoted to a consideration of the circumstances that modify the therapeutical indications, such as age, sex, original conformation, habit, climate, &c., we shall make the third chapter the occasion of a few further remarks on this disposition to explain and interpret the philosophy of therapeutics, and on the fondness for generalizing to which we have already alluded. The chapter treats of the modes of action of medicines, and of their classification. Dr. D. says that the action of medicines is either local and direct, or general through local influence. The general action, according to his arrangement, is threefold; to wit: by means of the nerves, by absorption, and by revulsion. Now, we hate

hypercriticism and mere verbal fault-finding with a good author as heartily as anybody can; and we are not about to object to this division of Dr. Dunghlison's, because we think it worse than various other analogous arrangements made by other therapeutists. It may be better than any of its predecessors, and it is not our intention to attempt to settle the relative merits of the different classifications or their respective claims to superiority. We object to this, and to all, as imperfect, hypothetical, erroneous. Does this objection need developement or illustration? Is it founded in reason or truth? Let us see.

In the first place, then, we admit that there is some foundation in nature for the primary or classic division of remedies into local and general. But even here the boundary line between the two classes is oftentimes shadowy and undefined. A refrigerant lotion, or an emollient, may act locally when applied to a local inflammation. But even in this simple case the localization is topographical merely. The action of the simple remedy may be very complex. The nervous tissue, the vascular, the dermoid, the cellular and the muscular may each receive, individually, a part of the new impression. In regard to the great majority of active remedies, administered internally, what grounds have we for fixing with any degree of confidence the precise extent of their agency? Dr. Dunghlison says that certain remedies act through the nervous system, others through absorption, and others by revulsion. All this may be true, so far as it goes, but there is no evidence that it covers the whole ground; and inasmuch as there is not, it is essentially and radically wrong. It is very probable, to be sure, that prussic acid, for instance, acts primarily, and it may be, exclusively, on the nervous system. The rapidity of its operation seems inexplicable on any other theory. It is very certain too, that many substances are absorbed; that they enter into the mass of circulating fluids, red and white. But what do we know about this beyond the simple fact that it is so? The substance is in this way brought into direct relation to the living fibre, but how it acts on this fibre we do not know. The nature of the impression made by it is a mystery. The third general mode of action is by revulsion. By this is meant, that irritating substances, applied to certain parts or tissues of the body, will, under certain circumstances, diminish or remove morbid actions going on in certain other parts or tissues of the body. And is not this the sum total of our knowledge on the subject? It is fashionable, we know, and it is considered *scientific* and rational to philosophize on the matter, and to explain *how* and *why* it is that this effect is produced. The *rationale* of this medication has been sought for and found in the old and oft repeated axiom, that two morbid actions cannot very well go on in the system together. But how far is this from being even generally true. It is now well settled that, in some diseases, in typhus for example, there is a strong disposition in very many of the different organs and tissues to take on acute inflammatory disease, one after another, or simultaneously even; the intensity of each being increased rather than diminished by the spreading of the morbid action over different points of the economy. How do

we know that mercury, taken as an alterative, acts on this principle of exciting a new disease incompatible with the old one for the cure of which it is used? Is the revulsive *modus operandi* in this case any thing but absolute gratuitous assumption? Is it any thing but whole cloth hypothesis? There are certain morbid conditions which mercury generally removes, and we have just as much reason for saying that the mercury acts directly on these morbid conditions, as we have for saying that it excites a new disease in the system, and thus drives out the old one. Let us be contented with asserting what we really know, which is simply this—that the mercury removes or mitigates the disease. Let us ascertain, with all possible accuracy, by long continued, varied, honest, careful observation, every circumstance which exerts a favourable or an unfavourable influence on the remedial action of the article, and therewith let us rest satisfied. In this, and in all other cases, the only legitimate object of investigation consists of the appreciable phenomena growing out of the relations existing between the remedy and the diseased human body. When we have ascertained the laws which govern these phenomena, we know all that we can know, and all that we need to know.

If fanciful and speculative men choose to amuse themselves, or the rest of the world, with their conjectures and explanations, surely we have no objection. They may find the occupation as pleasant and as profitable as any other species of air-castle building; but let them not dignify this guess-work with the misnomer of inductive philosophy; and let them cease to think that they are doing any thing to advance the utility of medicine as an art; the object of which is the mitigation of human suffering and the lengthening out of the term of human life.

The latter part of the third chapter is taken up with the subject of classification. Our author, as every new writer on therapeutics is in duty bound to do, makes some strictures on the classifications of his predecessors, and adopts a new one of his own. We do not wish to indulge in any further criticisms on Dr. Dunghlison's arrangement of his classes. Next perhaps in unprofitableness to the building up of these systems, is the labour of pulling them down. The greatest objection we have to our author's, is merely that it is a new one, and that we have thus an addition, utterly useless, made to a catalogue already too long. The old arrangement, based on simple observation and common sense, is the best that can be adopted in the present state of therapeutical science. This arrangement is founded on the most prominent and obvious action upon the body of the different articles of the *materia medica*. When a substance is found by experience to possess the property of directly allaying irregular spasmodic actions of the muscular fibre, let it be called an antispasmodic, and let all other substances endowed with a similar property be arranged in the same family group. Let the same thing be done with emetics, tonics, cathartics, narcotics, &c. Let certain other articles, such as cinchona, mercury, arsenic, iodine, &c., the administration of which, in moderate but repeated quantities, is attended by slow, gradual and

peculiar changes in the economy, be denominated, provisionally, at least, alteratives or specifics.

And here, lest Dr. Dunghlison, or any of our readers should be alarmed at our use and sanction of the concluding word of the last sentence, as they may already have been by our use of the word empiricism, we will state, as concisely as we can, what seems to us to be the truth in regard to the specific action and character of the articles of the *materia medica*. With these remarks we shall conclude our general observations upon those leading doctrines of the book before us, about which we venture to dissent from the opinions of its author.

It is quite natural that medical writers should have been, as they always have been, and as they still are, fond of classifying the several departments of their science and of generalizing its principles. In proportion as a science approaches the positive and perfect, does it naturally and necessarily resolve itself into clear and well established laws; its several parts assume their appropriate places and relations, as the atoms of a salt in solution do in the process of crystallization. Beside the influence of this natural connexion between arrangement, order, classification on the one hand, and the advanced state and certainty of science on the other, there is, to all minds, a seductive charm in the simplicity of broad generalizations. From this source, more than from any other, probably, arose the wide-spread and long-continued popularity of the Brunonian doctrine; and it may, we trust, be safely enough intimated that this same cause has had no very subordinate agency in the rapid propagation of a certain favourite system of pathology in our own day. The many headed monster, NOSOLOGY, was the legitimate offspring of this spirit, a spirit still vigorous and prolific, although that hydra specimen of her progeny has long since been gathered to the capacious but crowded sepulchre of its multitudinous kindred. Dr. Dunghlison arranges the articles of the *materia medica*, exclusive of such as act mechanically or chemically, in two great classes. The articles in one of these classes increase, locally or generally, vital action; those in the other diminish it. A third class is added by other modern systematists, to wit: the revulsive. Now these arrangements may be plausible enough, but what claim have they to the positive and demonstrable attributes characteristic of true science? Dr. Dunghlison places nauseants in his class of sedatives, and emetics in his class of excitants. By what therapeutical jugglery is tartarized antimony spirited alternately backwards and forward, through or over the broad and high wall of partition which separates the two classes? It is not our object now, however, to comment particularly on the arrangement of Dr. D. It is the purpose of these remarks to show that this entire spirit of general classification is unfriendly, so far as it goes, to a close, discriminating study of the *peculiar* properties of the separate articles of the *materia medica*; and that the great object of our therapeutical researches, on this particular point, ought to be to ascertain the exact individual *specific* value of these separate articles. *No single article of the materia medica,*

which is not endowed with peculiar properties, clearly defined, and, on this account, having, or capable of having, an especial relation to certain morbid conditions, ought to be retained in the list of remedial agents. Tartarized antimony and ipecacuanha are, both of them, emetics; but, it will hardly be pretended that their operation on the stomach, and, through this organ, on the entire system, is identical in its nature, differing only in activity. Each has its peculiar action. Similar remarks may be made in regard to the other important articles of the materia medica; and any generalization, the tendency of which is to merge these peculiar properties in some common family character, is unfriendly to the progress and certainty of therapeutical science. This spirit of generalizing, which we are endeavouring to combat, is objectionable not merely on the grounds of its abstract or scientific falsity, if we may so speak. If this were all, we could easily let it pass unnoticed. But this is not all. The error is full of practical danger. It influences directly and unavoidably our whole method and conduct in the selection and application of remedies. Imbue a man thoroughly with this spirit and he will be little careful in nice discrimination. An emetic with him will be simply an emetic; he has an indication to fulfil, and it will matter little what the particular article is which he uses. We think that the practice of the ultra disciples of some modern systems of medicine may be *invoked*, as Dr. D. says, in illustration of these remarks. In the first place, a simple, positive system of pathology is assumed. In the next, a classification of remedial agents is made, which exactly dovetails with this system. The indication is deduced from the pathology, and then any article which happens to be found in the proper category is used to fulfil the indication.

It would be easy to extend to a much greater length our observations on the foregoing subjects. We are well aware that some of the principles which they involve need fuller developement; but the space that we have already devoted to them admonishes to leave them for the present. We have been free in our animadversions, because the pages of Dr. Dunghlison's book are overlaid and pervaded with the ideas and doctrines to which these remarks are opposed; and because we think the doctrines themselves essentially wrong in their philosophy, and in their practical tendencies unfavourable to the advancement of therapeutical science.

After having disposed of his preliminary generalities, of his great principles, on the soundness and value of which we have now expressed ourselves with the freedom which the interests of truth always require, and, we trust also, with the candour and courtesy which the same interests no less imperiously demand, Dr. D. enters more immediately the field of therapeutics. We cannot go regularly through all the successive chapters and sections of this portion of the work, for the purpose either of criticism or analysis. As, however, we have thus far had the floor pretty much to ourselves, and lest we should be accused of unfairness in not allowing the author to be heard in his own behalf; and for the more grateful and agreeable purpose, further-

more, of commending to the attention of our readers some of Dr. Dunghlison's views on matters of great practical moment, of every day importance, we shall make up, for the most part, the remainder of our notice with such extracts as may best illustrate the general character and composition of the work, and with such, also, as may be practically interesting and valuable to our readers themselves.

The first section treats of excitants proper,—“agents that increase the organic actions by impressing the contractility of the part to which they are applied; the excitation thus induced being extended, or not, to the rest of the system.” We quote from this section the author's remarks on the use of excitants in the treatment of what he calls, loosely enough, we think, *fevers*. This point of practice is certainly an important one—one that has for a long time occupied the attention of physicians and been the occasion of much controversy. Whether the practitioner will find any of his doubts removed, or his principles of action rendered more intelligible and explicit by the following directions, we must leave him to judge.

“It need scarcely be said, that the use of excitants must be invoked with extreme caution in fevers. At one time—as I have already remarked—the great indication, in these affections, was supposed to be,—to obviate the tendency to debility and death, and, accordingly, antiphlogistics, especially of the depleting kind, were used with extreme caution, and every thing was done to husband the strength so as to permit the patient to bear up in the last stages. A better system of medical philosophy fortunately now prevails, and it is universally admitted, that few, if any, die from febrile debility, and that the fatal influence is seated in the over-irritation of some tissue, under which the patient gradually succumbs.

“The efforts of the practitioner are, therefore, properly directed to the prevention of irregular action in organs, and to the removal of irritation or inflammation, wherever existent, and, under this philosophical treatment of fever, excitants are, of course, never employed during the early periods, and it is only when the powers of life begin to flag, that a question arises as to the propriety of their adoption. Even in the very lowest stages of the worst grades of typhus, this question is not always very easily settled. There is generally more or less local irritation present—often in the lining membrane of the stomach and intestines—and many of the signs of debility are dependent upon the depressing influence exerted on other functions by the predominance of irritation there.

“We often observe this depressing influence singularly evinced in the sanguiferous system in diseases of the intestinal canal, especially such as affect the lining membrane. My friend, Professor Smith, of the University of Maryland, and myself attended, some time ago, one of the students of the university, who, after having been present at the lecture of the Professor of Obstetrics, in the evening, was attacked with violent vomiting, but without any abdominal tenderness or other uneasiness. On the following morning there was some slight tenderness on pressure, and the vomiting persisted. He was cupped over the abdomen, although neither the state of the pulse, skin, nor the other symptoms appeared to indicate inflammatory action. During the day, he gradually sank, and expired the same evening. On examining the body, a portion of the ileum was found contracted for the space of several inches, but this contraction must have been forming gradually. The lining membrane exhibited but slight signs of irritation; yet the cause of death was, doubtless, seated in this portion of the economy; and the only way we can account for it, is by in-

voking the intimate and extensive sympathy which exists between this part of the frame and the great centre of the sanguiferous system, so that a slight irritation there may produce marked depression, and even arrestation of the circulatory function. There is something, however, extremely unaccountable in these cases. The peristole of the digestive tube is but indirectly influenced by the brain and spinal marrow. Its functions appear to be principally carried on under the influence of the ganglionic nerves. The heart itself is equally abstracted from direct cerebro-spinal influence, and, indeed, from almost all nervous influence;* yet, in enteritic irritation, we find the whole circulatory apparatus oppressed, as it were; and this oppression, if not removed, rapidly terminating in depression; whilst, in the comparatively harmless disease—*tonsillitis*, or inflammatory sore throat—the action of the heart is inordinately excited, and the whole vascular system is thrown into violent agitation.

“It is generally considered proper to have recourse to excitants in fever, when the pulse becomes feeble and fluttering; the tongue moist perhaps, but with a dark fur; the teeth covered with sordes; the skin bathed in a cold, clammy sweat; or, if hot and dry, with concomitant symptoms of debility; with sinking down in the bed, and low muttering delirium; the tongue tremulous, and protruded with difficulty,—indicating great debility of the nervous system; petechiæ or vibices, produced by transudation of the blood through the loosened parietes of the vessels, &c. &c. But it is impossible to lay down any positive rules for the guidance of the practitioner, and it is better, that he should even allow the signs of prostration to become marked, before he passes to the too early use—as it may prove to have been—of excitants. Dr. Rush, as I have before remarked, considered, that there was a period in fevers, at which blisters might be applied as stimulants with great advantage; but, if used before this period they would be productive of mischief. It is obviously, however, impossible to fix upon any such point with accuracy; and in this, indeed, the main difficulty rests. If it could be decided on by any specific signs, it would be but necessary to apply the antiphlogistic or the stimulating medication accordingly. Vesicants are, however, by no means the best agents to be employed as excitants. In the low conditions of the frame, in which they are conceived to be indicated, the discharge of a large quantity of the serous part of the blood cannot fail to add to the debility more than the excitant property can detract from it; whilst they produce excessive irritation, and are, withal, transient in their operation. A more permanent excitant is, therefore, better adapted to these cases; and internal stimulants—as wine—are preferred, the quantity being carefully regulated so as not to stimulate beyond the due degree.

“Under another head, we shall see, that epispastics may be employed with decided advantage in fever, but not with the view of inducing general excitation.

“Whenever stimulants are esteemed necessary in fever, the fact before adverted to must be borne in mind, that their operation is apt to be followed by corresponding depression. They should be administered, consequently, so frequently, that the depression has not time to intervene, care being taken, that they are not given in such doses as to excite beyond the proper point; and, if their operation be salutary, they will be found to detract from, rather than add to, the febrile irritation; if, however, the febrile symptoms should be manifestly increased under their administration, they must be discontinued—but discontinued gradually—for the reasons just mentioned.”

We do not wish to be captious, but we should like to know what would be thought of the practitioner who, when he found the febrile excitement of his typhus or his scarlet fever patient manifestly in-

* ‘Human Physiology,’ First Edit. ii. 133, and Second Edit. ii. 144.

creased under the administration of stimulating medicines, should be careful to discontinue them *gradually*. Is it necessary that we should call the notice of the attentive reader and the cautious reasoner to the case of the student? Was there ever an instance of more utterly gratuitous assumption, of more naked and wide conjecture, than that which attributes the sudden death in this instance to the *gradually formed* contraction of a portion of the ileum, the lining membrane of which exhibited but slight signs of irritation?

Passing over the two sections on tonics and anthelmintics, we come next to the class of astringents. We have nothing to say of this section, except to offer a remark or two on the confidence with which the author speaks of the uselessness of all astringent remedies, unless they can be brought into direct contact with the surface from which the preternatural discharge takes place. "It is manifest," he says, "that in all increased discharges which occur from parts that can only be reached through the medium of the circulation, no signal advantage can be expected from the administration of astringents." And the reason why we are to expect no signal advantage is this, not that experience forbids us to do so, for the language of experience is quite the other way, but because we cannot see, or rather because Dr. Dunglison cannot see, *why* any advantage *should* be looked for. The astringent substance, if introduced through the medium of the circulation, must come in contact with the diseased surface—that of the uterus or urethra, for example, even if it reaches this surface at all, so changed and diluted that it cannot produce any considerable effect upon it; or rather we do not see *how* it can, and *therefore* it does not. No appeal or reference whatever is made to the teachings of experience. We are told by a man sustaining the high character of a practical physician, and performing the responsible functions of an authoritative teacher from the chair and through the press, that sugar of lead or sulphate of copper can be of little or no use in arresting or diminishing excessive discharges from any surface to which it is not immediately applied, *because* it is difficult for a *rational* therapist to see *how* or *why* it should be of any use. If this sort of idolatry in medicine—this worshipping of the false gods which our own hands have fashioned—affected matters of abstract faith only, we should be well content, as we have already said, to let it pass unrebuked; but when it comes to influence, so seriously and vitally, our works as well as our belief, it is quite essential to our salvation, or rather to that of our patients, that the false doctrine should be exposed.

The two following sections are devoted to emetics and cathartics. We should leave the second, as we do the first, without comment, did we not feel ourselves bound, in conscience and duty, to notice the following very extraordinary assertion;—"In the various head affections, and especially in encephalitis,—whether involving the brain or its membranes, or both—cathartics would clearly be advantageous, by virtue of the revulsion they effect, did not the inconveniences, to which the patient is subjected by the motion necessarily attendant on their operation, often preclude their employment." If

we thought it within the limits of possibility, that a single regularly educated practitioner,—that any one who will be likely to read the book before us,—however young or inexperienced, should be deterred from a practice, the necessity of which is so well settled and so unanimously admitted as that of free and active purging “in the various head affections, and especially in encephalitis,—whether involving the brain or its membranes, or both,”—by this paragraph of our author's, we would give a moment to the exposition of its dangerous errors. But this possibility can hardly exist, and we leave the sentence and the section without further comment.

We pass over the sections on emmenagogues, diaphoretics, errhines, diuretics, expectorants and sorbefacients. The last mentioned class consists of medicines which promote absorption. Among other agencies endowed with this property, the author classes “mental” sorbefacients. “Of these,” he says, “we have examples in the effect of the imagination in discussing tumours of various kinds. Some of these growths are possessed of but little vitality; and if the nervous and vascular influence be detracted from them, they speedily die. *This is the way in which charms remove warts.* It is a common popular superstition, that if we steal a piece of beef, rub warts with it, then bury the beef, or throw it over the left shoulder without looking behind us, as the beef rots the warts will decay; and that a dead man's hand, rubbed nine times on a wen or an enlarged gland, will dispel it; and such is the occasional result.” The removal of warts by such a process as the stealing of beef, rubbing the pathological part with the stolen article and then burying it, or throwing it over the shoulder without looking behind us; or by the simple, more direct, and withal the honester one, of selling these verrucous excrescences, by a fair business transaction, to some accommodating neighbour who is willing to purchase, is thus philosophically accounted for, and fairly installed within the domain of scientific therapeutics.

The next section, devoted to revellents or derivatives, seems to us to be a better one than any of its predecessors. We shall do ourselves the pleasure, our author the justice, and our readers the profit of quoting some of Dr. Dunghlison's observations of a practical nature from this section. They are sensible and judicious.

“The inflammation of the skin, caused by vesicants, is occasionally attended with fatal consequences. It is of the erysipelatous kind, and, under particular circumstances—as regards age, condition of the system, &c.—the inflammation eventuates in gangrene and death. In very young children, great irritation is apt to be induced by blisters, and, if the child be labouring under any morbid condition of the dermoid tissue,—such, for example, as is present in measles or scarlatina, the inflammation may terminate unhappily. To obviate this, when vesicants are esteemed necessary in the diseases of infants, they should not be permitted to remain too long on the part. From four to six hours will be sufficient, and a piece of fine gauze or of tissue paper may be placed between the blistering plaster and the skin—if cantharides be used—in order that no particle of the flies may adhere to the vesicated surface. We can hardly imagine an occurrence more disagreeable to the philanthropist than that of a patient dying, in consequence of the application of an agent from which he expects a cure, or at least a mitigation of the symptoms; great caution is there-

fore necessary in the use of these agents, in very early life, especially in the diseases referred to. I have known three or four cases of death manifestly accruing from the use of blisters under such circumstances, although it is probable, that in most of the cases a fatal event might have ultimately resulted, from the disorganization, produced by the mischief for which the blister was recommended.

“There is another great inconvenience, attendant upon the employment of vesicants composed of cantharides. This is—the absorption of the cantharidine, which enters the circulation, and proceeds to the urinary organs, giving rise to strangury, and, at times, to intense vesical irritation. That this is the mode in which the effect is produced,—that is, by entering the circulation,—is demonstrated by the fact, that the intervention of tissue paper, or of gauze, although it may not prevent vesication, effectually obviates the strangury;—the tissue paper preventing the absorption of the cantharides, which would otherwise have been effected. Yet, some have referred the strangury, in such case, to sympathy. Were this explanation correct, the tissue paper or gauze ought not to prevent it, as the vesication is accomplished through them. At times, it becomes necessary to apply the blistering plaster over a surface, which has been scarified in the operation of cupping. The only precaution, here again, requisite, is to cover the wounds, made by the scarificator, with tissue paper.”

“With regard to the question—whether a permanent or an intermittent revulsion is more efficacious?—I do not think that much dissidence now exists amongst therapeutists. The majority are unequivocally in favour of the latter plan, although circumstances may often induce them *practically* to have recourse to the former. The reasons, in favour of this preference, are cogent. When an artificial irritation, accompanied, or not, with increased secretion from the part, has been established for some time, it ceases, in a great measure, to be a morbid condition, and becomes, as it were, a part of the healthy function, so that it cannot be arrested, without inconvenience being apt to result, and without danger of a centre of fluxion being established in some internal organ, more disposed than others to assume the morbid condition. In this way, many discharges, the result of morbid action, become, in process of time, healthy, and cannot be officiously interfered with. On the other hand, if a succession of irritations be produced, the system never becomes habituated to them, and the repetition of the irritation, after the lapse of a short period, occasions the same beneficial impression, as on its first employment. Hence it is, that a succession of vesicants, and, indeed, of every variety of epispastic, is to be preferred to a more permanent application—and that issues and setons lose much of their beneficial influence in the latter periods of their employment;—their good effects, as revulsives, being in an inverse ratio with the shortness of the period, during which they have been in action.

“The intensity of the artificial irritation, induced by a revulsive, is worthy of consideration, in a therapeutical point of view. If it be but trifling, it may be insufficient to break in upon the internal morbid catenation; and, on the other hand, if too violent, irritative irradiations may pass in various directions, and may even add to the internal mischief. Every practitioner must have occasionally witnessed an aggravation of symptoms from this cause, especially in those whose nerves are unusually impressible. In such, no variety of epispastic can, at times, be used. I have, at this time, under my care, a lady, who is thrown into the most violent nervous agitation, by the application of the smallest blister; and blisters have occasionally been known to induce convulsions. There are certain individuals, too, who suffer excessively from the vesication induced by cantharides, and yet, who are not—what would be called—extremely nervous. Their cutaneous nerves are, however, inordinately impressible. In such persons, vesicants would necessarily fail in their effects—by the general disorder, which would follow the high degree of erethism of the

dermoid structure. In such individuals, blisters are never found to exert their salutiferous agency; on the contrary, the irritation, they produce, is reflected to every part of the economy, and too often the diseased action, for the removal of which they were applied, is, in this way, augmented. In like manner, where the powers of the system have been greatly reduced, and much nervous irritability has been developed, blisters are apt to produce mischief. Broussais has made this fact the foundation of one of his propositions,—restricting it, however, to cases of gastro-enteritis. ‘Vesicatories,’ he says, ‘often augment gastro-enteritis, because the inflammation, which they produce, adds to that of the digestive mucous membrane, instead of producing revulsion; they do not, then, render the services expected from them, in that grade of these diseases, which is called “adynamic fever.”’*

“The character, and period of the disease have much to do with the action of revellents. Every practitioner must have observed, that in the phlegmasiæ, when the disordered actions run inordinately high, but little effect is usually produced by revellents. I am not, however, prepared to say, that they invariably do harm. I had an opportunity of witnessing, for a long time, the practice of an individual, much engaged with the duties of his profession, who always had recourse to blisters, from the first onset of inflammatory affections, often not only with impunity, but with manifest advantage. Theoretically, it would seem, that if the manifestations are already largely exalted, any source of irritation ought to add to such exaltation; the principle, however, that two irritations do not easily exist, at the same time, in the body, to the like intensity, applies even here; and, I can say, from extensive observation, that although the beneficial agency of revellents is not as marked as where remedies have been premised to allay the tumult in some measure, they have not always appeared to me to aggravate the disease, and have often been followed by a mitigation of the morbid action. I cannot, therefore, subscribe to the opinion, that ‘in very strong subjects affected with intense irritations, accompanied with considerable febrile excitement, and having their seat in viscera important to life, or propagated to large surfaces, revulsion is next to impossible, and cannot even be attempted without danger.’† The danger does not appear to me to rest so much on the employment of the revulsives, as on the neglect of more effective measures, which such cases imperiously demand.”

The recommendation contained in the following extract is new to us. Its value must be settled by experience.

“In the case which I before offered—of encephalitis liable to be augmented by epispastics applied to the shaved scalp, we rarely observe, in American or British practice, the revulsive applied at a greater distance than to the nape of the neck. There is no reason, however, why this part should be preferred to the top of the sternum,—where I am in the constant habit of applying it in such cases, and, as I conceive, with full advantage, whilst there is an overwhelming objection to the former situation,—in the circumstance of its rendering the position on the back uncomfortable, and, at times, impracticable, owing to the abraded surface being subjected to attrition on every change of position of the head. Practitioners have been so little in the habit of reflecting on the mode in which epispastics produce their salutary agency, in these cases, that they rarely select a more convenient, and yet equally effective, centre of irritation, at a greater distance from the seat of the mischief. Many of the French writers recommend blisters to be placed upon the arm, or between the shoulders, in encephalitis; but it has always appeared to me, that the top of the sternum is perhaps the least objectionable situation, where counter-irritants are demanded in head affections, accompanied by exaltation of the organic actions.”

* Prop. 288.

† Begin, *Op. citat.* p. 747.

The whole section from which these selections are made is above the average standard of the work of which it forms a part. It is less incumbered with faulty pathology and fanciful explanations, and is marked throughout by the better spirit of cautious observation.

Omitting any notice of the section on antispasmodics, we come next to the chapter on sedatives. Dr. Dunghlison very properly, we think, admits without any hesitation the existence of "agents that directly depress the vital forces." Among these he places hydrocyanic acid, hydrosulphuric acid, sulphuretted hydrogen, some other of the gases, and tobacco. This list might probably be considerably extended. In this chapter our author enters somewhat largely into a general discussion of the uses and abuses of blood-letting. Many of his remarks on these important topics are characterized by much good sense and discretion. Dr. Dunghlison is a cautious, discriminating bleeder; the disciples of Bouillaud in Paris and the pupils of the Sangrado, Gallup school in New England, would call him a timid and temporizing one. We give below some of his views and opinions, leaving our readers to choose, on such evidence as their reading and experience may furnish them, between the moderate and careful practice of our author and that of the more fearless and ultra advocates of the lancet.

After having spoken of a case where symptoms of acute cerebral inflammation occurred in an irritable and nervous female, Dr. D. says:

"I am satisfied, that had depletion been carried to a greater extent in this case—as it would most certainly have been, by those practitioners, who believe that general blood-letting is the only agent, that can be relied on as an antiphlogistic, great mischief would have resulted. Long, indeed, before Dr. Marshall Hall had published his interesting 'Researches on the effects of loss of blood,' I had been deeply impressed with what appeared to me the faulty views, entertained, both as regards the pathology and the therapeutics of such cases as those I have mentioned; and had satisfied myself, that the maxim inculcated by many practitioners as applicable to internal inflammations in general—'when you have bled in inflammation to such an extent, that you are doubtful, owing to the persistence of the symptoms, whether you should bleed again,—bleed,'—was a faulty one, and often, I fear, attended with disastrous consequences. As a general rule, I would say, on such occasions of doubt and difficulty, 'do not bleed, but have recourse to some other appropriate sedative, or revulsive agent, until your doubt is removed.' Every practitioner, much engaged with the diseases of women, must have met with cases of peritoneal inflammation in the puerperal state, in which, after bleeding has been practised as far as he has esteemed it safe, the effects of a sedative dose of opium have been signally salutary. The irritability of the nervous system has been allayed by it; whilst, if the bleeding had been repeated, it might have been formidably developed."

After quoting from Gooch, Dr. Marshall Hall and Abercrombie, their accounts of a morbid condition of the brain, occurring most commonly in children, where most of the usual symptoms of cerebral inflammation or congestion seem to be dependent upon an opposite pathological state of this organ, Dr. D. goes on to say:

"I have cited the above remarks at some length, in consequence of their marked accordance with the views I have been led to entertain in what have appeared to me to be similar pathological conditions; and I am satisfied, that

both in children and adults, we often meet with an analogous state of the brain, and especially in scarlatina. In the disturbed state of the encephalic functions, which so often attends that anomalous disease, we recognise—it has appeared to me—a condition very different from that, which is produced by active inflammation or congestion in the encephalon. Under the great expenditure of nervous energy, which takes place over the whole of the capillary surface, and which is indicated by the inordinate activity of the agents of calorification, of which the organic nerves distributed to the capillary blood-vessels are the most important, the great encephalo-spinal centre appears at times to be in a state very different from that of inflammation or active congestion. It is rather exhausted by the unwonted energy of the organic portion of the nervous system; and, accordingly, in many such cases, the use of diffusible excitants has been found serviceable,—the delirium or the coma gradually disappearing as the system begins to feel their compensating influence. This practice has been adopted in scarlatina, when accompanied by such signs of encephalic disorder, with great success, by my friend, Dr. Baer, of Baltimore, and it has been followed by the most happy results in one or two cases, which fell under my own care. Under the vigorous use of depletives, the symptoms have not been mitigated; at times, indeed, they have seemed to be aggravated; but on changing the system of treatment, and having recourse to tonics or excitants, a marked amelioration has speedily ensued.”

In regard to blood-letting in the convulsions of children, our author makes the following remarks:

“Prior to the period of the first dentition, owing to certain evolutions of organs, the nervous system is, as we have previously seen, unusually impressible, so that sources of intense irritation, existing any where, may be the occasion of irritative irradiations proceeding in all directions, until the parts of the cerebro-spinal axis have their functions deranged, and sensation, volition, and mental and moral manifestations become, for the time, suspended. In this manner, the irritation produced by the pressure of a tooth against the gum, or any source of excitation in the intestinal canal may become the cause of convulsions; and, after the functions of the cerebro-spinal axis have been once so far deranged as they are during convulsions, they are extremely prone to re-assume the morbid condition, until, ultimately, organic disease of the encephalon occurs, or the little sufferer is worn out by continued irritation. Now, in such a case, the predisposition to the disease is—the period of life; and the exciting cause is—the irritation in the alimentary tube. Great mobility of the nervous system—great impressibility—is present even in health, and this impressibility only requires the application of a sufficient exciting cause to have convulsions developed.

“In addition to this general predisposition, derived from time of life, there is doubtless an organization, obtained from progenitors, which predisposes to convulsions. We frequently see a whole family subject to them, during childhood; and, on inquiry, we may find, that one of the parents was liable to the disease in his childhood. In such cases, a less energetic exciting cause, is required to develop the mischief, possessing, as they do, a double source of predisposition. In the cases which I am now describing, we cannot invoke polyæmia, or hyperæmia of the encephalon. They are wholly neuropathic. The predisposition is unusual nervous impressibility; the exciting cause is often situated in the digestive tube; and very frequently the irritation there is produced by food of an improper character, or by some inflammatory or other morbid condition of the mucous or lining membrane. The indication cannot, consequently, consist in diminishing the quantity of blood circulating in the system, with the view of removing any supposititious congestion of the brain. Blood-letting, indeed, in such a state, could hardly fail to add to the mobility and impressibility of

the nervous system, and it has appeared to me, in many cases, to have been followed, too manifestly, by augmentation of the symptoms. The convulsions have recurred; the surface has become cool, and pale,—almost exanguious; the circulatory forces have exhibited, that their action was enfeebled; the little sufferer has continued in a state of coma between the fits, or has had but short intervals of consciousness; and he has gradually sunk with no signs of hyperæmia,—unless we consider the convulsions and the coma to indicate such a condition—for, on dissection, no morbid appearances whatever have been met with in the brain, or that effusion of serum has been discoverable, which, as I have before shewn, is present, when we bleed an animal—and a healthy animal—to death.

“Proceeding on those pathological principles, I have not often considered it proper to abstract blood in the convulsions of infancy; in almost all cases, it has been but necessary to clear the alimentary tube by a gentle emetic, followed by a mild cathartic; to keep the child from every source of irritation, that could act injuriously on his organs of sensation from without, or on the intestinal mucous membrane from within; to equalize, as far as practicable, the excitability of the cutaneous surface by the use of friction or of the warm bath; and, under this plan of management, I have almost always found the affection eventuate favourably. At the same time, it is proper to remark, that there are cases of convulsions accompanied by every sign of vascular excitement, and where a true polyæmic or hyperæmic condition of the brain exists. Here, of course, blood-letting is the main agent to be relied on. If encephalitis be present, it must be treated as encephalitis; but, in all cases, the most careful attention must be paid to discriminate, whether the convulsions are accompanied or produced by a redundancy, or by a deficiency of nervous and vascular energy.”

Dr. Dunghlison's cautiousness on this important point of therapeutics is very manifest in the following extract:

“The extent to which blood-letting should be carried, in cases of violent internal inflammation, is often a matter of great difficulty with the discriminating, but of no difficulty whatever with the reckless and uninformed. In his state of blissful ignorance, the latter continues to bleed, and consoles himself, when the fatal result has been hastened—perhaps mainly induced—by his agency, that the sufferer has fallen a victim to an incurable malady. Many have laid down a rule, before referred to, that when we have pushed the blood-letting to such an extent, and so often, that we are in doubt whether the operation should be repeated, the decision should be in the affirmative. But, with the disposition, which prevails so generally,—and which prevailed, a few years ago, to a much greater extent than it does even at present,—to bleed without due consideration, such a doubt will rarely be felt, without good ground at the same time existing for staying the hand; and, therefore, the decision, according to my experience, ought generally, as I before said, to be in the negative. The argument commonly urged for the farther abstraction of blood is, that the inflammation manifestly persists, and that it must inevitably destroy if not arrested;—that blood-letting is more likely to subdue it than any other therapeutical agent; and that if it should not, the physician will have the consolation of knowing, that he has done every thing in his power to avert the melancholy termination. Were the abstraction of blood, in all cases and to any extent, devoid of danger, this mode of viewing the subject might be logical; but mischiefs result from bleeding, in these and similar cases, which are fairly referable to the operation, and are equally serious in their results with the disease for which it may have been employed.”

We do not think our author's anecdotes and illustrations, historical

and poetical, always the most near-fetched and opportune, but the following appears to us worth at least the small space that it will occupy and the little time required to read it.

“The satisfaction, often felt at the exhibition of energy on the part of the practitioner, is well exemplified by an anecdote, which an illustrious native of this country—now no more—who had filled the highest office in the gift of a free people, and whom I had the honour of ranking amongst my personal friends—was in the habit of recounting.

“Travelling from Virginia towards the north, he rested for the night at a tavern on the road; soon after his arrival at which, the hostess came in from a neighbouring house, with the females of her family,—all exhibiting marks of deep distress. He was informed that they had been witnessing the parting scene of a young friend, who had died of some acute affection. ‘But, thank God!’ observed the contented matron, ‘every thing was done for him that was possible, for *he was bled seven-and-twenty times*.’ ‘It is not’—says the inimitable Molière, who was unsparing in his appropriate philippics against the profession, and the public of his day—‘it is not, that, after all, your daughter may not die; but, at all events, you will have done something and you will have the consolation, that she died according to form.’ ”*

There are many other portions of this valuable chapter which it would gratify us to copy, but the extent to which we have already carried our extracts, and the length also which our notice is attaining, both admonish us to desist. We shall finish our quotations, therefore, with the following observations relating to the application of leeches to young children. We presume that there are few of our readers, who have resorted much to this very valuable means of treating inflammatory disease in young subjects, who have not been summoned, more than once, to their little patients, cold, panting and waxen-hued from the loss of blood by two or three leech bites.

“It has fallen to my lot to witness some alarming cases of exhaustion, especially in children, where leeches have been applied: in two cases indeed the result was fatal. In both the cases due attention had not been paid, and a large amount of blood was lost before the cause of the sinking was discovered; and in one of them every attempt to arrest the flow of blood failed. These cases are rare, but they constitute objections to the use of leeches which do not apply to cupping,—the flow from the wounds made by the scarificator being readily arrested. When practicable, the leeches should be placed over bone, in order that pressure may be conveniently made on the bleeding vessels, should such a course be requisite.

“ ‘When leeches are applied to soft parts,’—says an author to whom I have often referred,—‘for instance, to the abdomen, it is truly astonishing how much blood sometimes is detracted; particularly when a poultice is applied over the bites, and the patient is kept warm in bed: to prevent, therefore, injurious symptoms of exhaustion from such a circumstance, the poultice should be frequently examined. This is more likely to occur in children than in adults; and in children it not unfrequently happens that the bleeding cannot be stopped without encircling the orifice with a ligature. On this account leeches should never be applied late at night on children; for, as the application of leeches in infancy must be regarded as a species of general blood-letting, the precise num-

* “Ce n’est pas qu’avec tout cela votre fille ne puisse mourir, mais au moins vous aurez fait quelque chose, et vous aurez la consolation, qu’elle sera morte dans les formes.”—*L’Amour Médecin*, Act. i. Scene v.

ber which will regulate not only the quantity, but be equivalent to rapidity in the detraction of the blood should be determined; but the bites should be instantly closed, on observing that the system is brought under the influence of loss of blood.' ”*

The remainder of the work treats of the following classes of medicines, to wit: narcotics, refrigerants, nauseants, antacids, antalkalies, antilithics, disinfectants, antiseptics, demulcents, diluents, and alteratives. The last chapter is one of “concluding observations;” and this, together with the volume, is terminated by some excellent passages from an excellent essay by Professor Bigelow of Boston—an essay as unlike in its spirit and character the work to which it is here appended as can well be imagined.

We have spoken of Dr. Dunglison’s treatise with freedom: it is very probable that the author and his friends may think that we have spoken, in some instances, with undue license and unnecessary severity. We have not intended to do so. We belong to no party, medico-doctrinal or medico-geographical; we have no personal interests, prejudices or passions, to be in any way affected, or that can in any degree have influenced our feelings or our language. We have said what the interests of truth, science and humanity seemed to us to require, and no more. We are advocates for free discussion, in its best and fullest sense; but we believe that no discussion can be truly free which is not also courteous in manner, and as kind in spirit as the circumstances will allow. We believe the doctrines we have controverted to be dangerous and erroneous, but we distrust with too much sincerity our own opinions, as well as those of other men, to claim for them any exemption from fallibility. We ask for them only that fair hearing and attention which the deliberately formed opinions of any earnest lover of science and humanity may always reasonably claim.

E. B.

ART. XII. *A Treatise on the Malformation, Injuries and Diseases of the Rectum and Anus.* By GEORGE BUSHE, M. D., &c. New York: French & Adlard, 1837. 1 vol. 12mo., pp. 299, with nine quarto plates.

The author of this little treatise has been cut off in the midst of his labours since the completion of the work; the lights of his experience and reflections will never again be thrown before the public, and one of the chief purposes of a critical review, the correction of the peculiar faults of an author, is no longer capable of fulfilment. It only remains for us to notice the claims of the essay upon the attention of the profession.

The range of subjects discussed by Dr. Bushe, is nearly as exten-

* Thomson, op. cit. i. p. 458.

sive as that contained in the principal treatises previously published in our language, but we remark some few omissions in the list, evidently arising from a neglect of the labours of American anatomists and surgeons. These will be mentioned as we proceed.

The history and symptomatology of the various diseases, seem to be more generally compiled from books than we should have expected, when recollecting the fact that the author was one of the most extensive practitioners in the most populous city of the union; and it is chiefly in the addition of a few illustrative cases, occurring under his immediate observation, that the novelty of the work consists. The therapeutical directions are given in a manner rather objectionable on the score of dogmatism, as they consist, for the most part, of a mere enumeration of some of the plans of others, with an announcement of the methods preferred by the author, unaccompanied by all the argument desirable for those who would wish to form independent conclusions.

It has been, perhaps, a fault with some of our more recent reporters of cases to carry a little too far their attention to details not strictly relevant, after the fashion of some French pathologists; but, in the work before us, the author has unfortunately coupled a share of this failing with the worse error until lately prevalent on the other side of the channel. He has neglected many points necessary to the clear comprehension of the cases. It is a matter of no importance to the profession to know where and how the surgeon is occupied when called to a case, but when the application of caustic to a delicate part is directed, it becomes a matter of much moment to ascertain whether the nitrate of silver, the hydrate of potassa, or the chloride of antimony be the kind of caustic indicated.

With the statement of these general impressions, resulting from the first perusal of the work under notice, we will proceed to the examination of its separate chapters.

The details connected with the anatomy of the rectum are tolerably full, but it is evident that the writer had not studied with attention the mutual relations of the two sphincters, together with the direction and attachments of the longitudinal fibres of the intestine. In a note at page 12, he extracts the description of the duplicature and reversion of the longitudinal fibres beneath the edge of the internal sphincter, given by Professor Horner in his *Special Anatomy*; quoting the edition of 1826. He then remarks—

“As I have had no opportunity, since I read the above in Mr. H.’s treatise, of examining the rectum post-mortem, I am, of course, unwilling to admit his description into my text; yet as this gentleman’s opinion is entitled to every attention, I have thought proper to insert it in the form of a note, so that others may ascertain whether it be correct.”

It is to be regretted that the *American Cyclopaedia of Practical Medicine and Surgery*, published in a neighbouring city, did not fall into the hands of the author before the publication of his work, as he would there have found, under the head of *Anus*, a much more full and perfect account of the course and character of the longitudinal

fibres of the rectum, as demonstrated by Dr. Horner. He would also have found an analysis of the relations between these fibres and the columns of the rectum, the pouches uncertainly and imperfectly described by Rives, and certain other parts occupying the interspace between the two sphincters of the rectum, all which points have important bearings on the pathology of the rectum and anus.

Dr. Bushe opposes the doctrine of Mr. Houston of Dublin in relation to the mucous folds, supposed by that author to be regularly disposed in a kind of spiral line throughout the rectum. Speaking of the mucous coat, he observes—

“Superiorly, it is smooth, and when empty, in consequence of its great amplitude, it is thrown into oblique and transverse folds, which, however, do not assume any regular form or arrangement.”

And again, in a note on the valvular arrangement described by Mr. Houston—

“With all due deference I would beg leave to remark, that his misapprehension of this piece of anatomy has arisen from his methods of investigation:—one, by filling the intestine with alcohol, and then opening it; the other by inflation and drying. In the first, the accidental folds are rendered permanent by the induration resulting from the action of the alcohol; while, in the second, the projections resembling valves are produced by the angles formed by the settling of the intestine during the process of desiccation.”—p. 13.

Now, although the existence, even occasionally, of proper valves, with muscular fibres, such as are described by Hutchinson, has been rendered extremely improbable by the investigations of recent anatomists, the existence of occasional wide and permanent duplications of mucous membrane dividing the rectum into cells, *but not provided with muscular fibres*, has been placed beyond a doubt by the preparations in the Wistar Museum, deposited by Dr. Horner.

As we have already described this arrangement on several occasions, (see review of O’Beirne on Defecation, in this Journal, for August, 1836,) it is unnecessary to repeat the details here.

With regard to the semi-lunar valves or sacculi of the anus which have led to so much discussion—having been supposed to be obscurely figured forth as accidental occurrences by Glisson and Ruysch, rather more distinctly by Winslow, identified after years of search by Ribes, and proved to be a normal and constant structure by Horner—Dr. Bushe expresses great surprise that anatomists should have experienced any difficulty in finding them. He says: “For my part I have been always able, in my lectures and dissections, to verify the concise description of Winslow,” &c.—p. 15. But the description of Winslow is so concise that it shares in the obscurity which overshadows the notices of all the authors anterior to Ribes, and is not entirely dispelled from the latter. We are left, then, still in doubt, whether the semi-lunar valves so continually demonstrated by Dr. Bushe were the true sacculi of the anus described in the article to which reference has been already made, or merely follicles, or accidental transverse mucous folds in the grooves between the columns of the rectum.

The want of attention to the observations alluded to, based as they

re upon the dissections of the most profound anatomist on this side the Atlantic, has prevented Dr. Bushe from arriving at some important conclusions connected with the history of prolapsus and accidents of the rectum.

The enlargement of the anus in the interspace between the two sphincters is not described; consequently the history of the causes and progress of fistula in ano is rendered less complete and philosophical. The author does not seem to have been at all acquainted with the preternatural pouches of this region, as observed by Dr. Physick; or if familiar with them, he has classed them with internal fistula, and has neither noticed the peculiar symptoms following the accidental introduction of small portions of feces in these pouches, nor the operation required for their cure. (Amer. Cyclop. of Pract. Med. and Surg., Vol. II., p. 123.)

The second chapter, treating of the functions of the rectum, is too short to be very satisfactory, and displays in a strong light the defects consequent upon the neglect of many important points in the anatomy of the region. The peculiar notions of Dr. O'Beirne on defecation are combated at great length; but as we have already discussed this question in a former number, it is unnecessary to comment upon it here.

The subject of malformations of the rectum is next introduced; and although the history of the varieties of imperforations of the anus and rectum is rather slightly passed over, the accompanying notes furnish some interesting bibliographical references creditable to the research of the author.

The list of foreign bodies in the rectum, which follows in order, is curious and considerable. It seems, indeed, that nearly all the apparatus of the table as well as their contents, excepting the table itself and the larger dishes, have occasionally found their way to this receptacle. Knives, forks of wood and iron, cups, bottles, jelly pots, jaw bones of dogs, and pigs' tails with the bristles, are among the number! A tolerable idea of the variety of these foreign substances may be formed by perusing the following catalogue.

"The instruments necessary for extracting these bodies are blunt hooks, of different sizes and shapes, a lever," (quere, of what dimensions?) "gimlet, cutting forceps, strong long scissors with probe points, a six inch narrow saw, wooden gergeret, polypus and lithotomy forceps of different shapes and sizes, a speculum, strong waxed ligatures, metallic tubes of various length and size, and a probe-pointed bistoury; to all of which, the crooked finger and a small hand are admirable adjuncts."—p. 58-59.

A tyro in the profession might well be alarmed at this terrible array; and it may be well to observe that the extraction of foreign bodies from the rectum, though the operation requires some anatomical knowledge and often considerable caution, is, in most instances, a very simple business. It excites the fears of the patient and the disgust of the surgeon; but the only instrument not contained in the common pocket case required in any but the rarest accidents, is a short forceps, on the principle of the œsophageal instrument invented by Dr. Bond of this city, which facilitates the extraction of all long, slender,

and pointed bodies from narrow canals. In those very unusual cases in which tea cups, jaw bones, glass bottles, &c., have been found in the rectum, the circumstances of each individual accident will determine any intelligent surgeon in the choice of tools for extraction better than will the record of the *modus operandi* in former instances.

It is unreasonable to add to the list of apparatus for rectal operations a *six inch saw*, merely because a madman once chose to make a suppository of a long forked stick; for if a similar instance of monomania should recur within the next century, the nearest watch-maker's shop will supply the deficiency.—(p. 63.) As for cases like that narrated by Marchetti, which has been harped upon *usque ad nauseam*, more to the detriment of morals than to the benefit of surgery, the expedient of the canula should suggest itself to any tyro in the art.—(p. 64.)

The principal original notice in this chapter is a case of the extraction, without dividing the sphincter, of a rectal concretion, six inches and three-quarters in circumference and two and a half in length. The patient was a delicate female, thirty-five years of age, who had laboured under constipation and colic for seven years. Her bowels were moved with great difficulty by the aid of powerful enemata and cathartics during the attacks.

“I was called to visit her in one of these paroxysms, and found her sallow, emaciated and dejected. From severe bearing-down pains, together with the weight and fulness in the sacral region, which she complains of, I was led to make an examination of the rectum, when I found the mucous membrane slightly protruding from the anus, and very turgid, the sphincter excessively irritable, and a large concretion distending the pouch of the rectum. I now apprised her of the nature of the case, and the absolute necessity of removing the foreign body, to which she willingly consented. Having placed her hips over the edge of a bed, and bent her knees toward her chin, while she lay on her back, I introduced a strong and long lithotomy forceps, with which cautiously laying hold of the concretion, I slowly and steadily extracted it, with no more injury than slight laceration of the mucous membrane.”—p. 60.

In this instance, the foreign body, together with the forceps, for which due allowance must be made, will measure two and a half inches in diameter, and this may be considered about the limit of the dimensions of a smooth body, which may be extracted from the pouch of the rectum without the aid of incisions or the danger of any very serious injury from distension.

It is mentioned that leeches, when applied to the anus, may make their way into the rectum, and an injection of an infusion of tobacco or a solution of salt is recommended for their expulsion. Zacutus Lusitanus is quoted as recommending injections of onion juice, ox gall, or castor for similar purposes.—p. 66. We should much prefer the very obvious practice which consists in preventing the leeches from entering, for it is only through very gross negligence that such an accident can occur! But suppose a leech to have made a lodgement in the rectum, there can be no sufficient reason for rendering him more uncomfortable than his own wayward will must make him! The medicinal leech is an animal far too delicate long to tolerate such

disagreeable lodgings! He will neither adhere to a dirty surface, nor tolerate acridity or fetor; and if the mucous membrane should happen to be unusually clean, he would very soon experience the pleasures of repletion and pass off unconsciously with the first discharges, in the midst of his after-dinner nap! The cases requiring the application of leeches are precisely those in which the introduction of glyster pipes and stimulating enemata are most injurious, and we cannot perceive the slightest propriety in their employment.

While upon this subject, it may be well to express our fears for the use of the large European leeches in parts so delicate and irritable as those around the anus. The more diminutive American kind is far better adapted for the purpose.

The lacerations of the rectum which are next introduced by Dr. Bushe, are divided into the incomplete and the complete lacerations. The former are for the most part ruptures of the mucous membrane from the passage of hardened feces, or from the introduction of foreign bodies: the rents being either longitudinal in the anal canal, or transverse at the upper margin of the internal sphincter. Three cases are narrated, in one of which, a longitudinal rupture of six weeks standing soon yielded to confinement in the horizontal position, lavements, ablutions and narcotized saturnine poultices; in another, a crevice of five days standing, with tumid edges, and complicated with spasm of the sphincter, did not yield to similar treatment until "a cane of caustic" (nitrate of silver?) was passed thrice over the lacerated surface: in a third, a transverse laceration at the upper edge of the sphincter required the free division of that muscle before it could be cured.

The complete lacerations are divided into three species, according to the nature and extent of the parts interested. There are much confusion, and some apparent contradiction in the few pages devoted to this subject; and the discussion is almost restricted to the consideration of laceration occurring during labour. To sum up the subject in a few words, Dr. Bushe finds a very large majority of these lacerations confined to the integuments together with the mucous membrane and the external muscle, and caused, generally, by the preternatural elongation of the perineum: sometimes, the recto-vaginal partition is ruptured above the sphincter; and, very rarely, this partition, together with the perineum, is completely torn asunder. In the case of one lady, Dr. B. thinks that he very narrowly escaped observing what Dupuytren terms *la déchirure centrale du périnée*.

"I found the perineum much elongated, the orifice of the vagina very narrow and close to the pubis, and the head of the child pressing forcibly downward. When the pain, which was violent, subsided, and the head retreated, I introduced my finger, and to my discomfiture, found a rent at least four inches in length, extending transversely through the posterior part of the vagina, about an inch and a half from the vulva. I now inserted my finger into this laceration, and distinctly felt the lower extremity of the rectum firmly contracted. Another pain soon came on, which fortunately was not very strong, so that I was able to support the child's head while I had a probe-pointed bistoury taken from my pocket case, and when the pain ceased, I divided the perineum obliquely downward and outward on both sides, to an extent sufficient to allow

of the delivery without further laceration. In this case, I have no doubt had I been a little later, there would have been perforation of the perineum."—p. 76.

We do not observe much originality in the practical directions for the management of these lacerations, if we except the introduction of some modifications of the needle in making the sutures. In the milder form of external laceration of the perineum, Dr. B. employed a kind of semicircular silver hare-lip needle, armed with a moveable steel point at one end, and a fixed silver shoulder at the other. The needle being introduced, and the point unscrewed, a moveable silver shoulder was substituted for it, and a ligature was then applied in the usual manner of the twisted suture.

A case is narrated in which a rent of five months standing was cured by means of two of these sutures, after the excision of the cicatrized edges.—p. 83.

We will close our notice of this chapter after extracting a more remarkable case.

"When the recto-vaginal partition, sphincter and perineum are torn through, the case assumes a very serious aspect. I have never seen but one of this character, and that was in the person of Mrs. D. who, in 1828, had a dreadful accouchement. Thirteen months after this, when the surfaces of the wound had healed separately, and all the parts were puckered, turned, and partly excoriated, after having removed as far as possible the existing irritation, I performed the following operation. Having placed her as in the operation for stone, I excised the edges of the wound on a wooden gorgeret, and passed two sutures, each half an inch apart, through either lip of the recto-vaginal septum, and then tied them in the vagina. Finally, I inserted one of the perineal pins as described in pages 82-3. The sutures and pin were removed on the eighth day, when all the parts appeared firmly united. I may say that I experienced no difficulty in passing the sutures, which I attribute to the employment of small curved needles.—(See plate viii. fig. vii.) and the *pince port-aiguille* of Dieffenbach."—p. 85.

The three next chapters on inflammation of the rectum, inflammation and excoriation of the anus, and inflammation of the rectum and anus arising from the application of gonorrheal matter, are comprised in less than seven pages, heavily leaded and with ample margins; it is hardly necessary, therefore, to apologize for passing their contents unnoticed.

Fissure of the anus seems to have been observed more frequently by Dr. Bushe than by most American surgeons. There are two points only, in the treatment, which appear to us particularly worthy of notice. First, the employment, (in some cases of superficial fissures attended with spasm, after the application of nitrate of silver,) of an extract of belladonna and spermaceti, in the proportion of one part of the former to seven of the latter. This ointment, differing only in its proportions from that previously recommended by Dr. Laporte, (see this Journal, Vol. VII., p. 250,) is stated to have been more successful than that employed by Dupuytren, and which was composed of belladonna, acetate of lead and lard. Secondly, the application of ice to one case of fissure, in which caustic had produced intense pain, not relieved by morphine. The ice relieved the pain of the paroxysms, and the ointment of acetate of lead, emollient enemata, low diet and the horizontal position, completed the cure.—p. 105.

Four cases are narrated at the close of the chapter; one speedily cured by emollients, acetate of lead, diet, ablutions, and lavements; another by the same measures, combined with emollient enemata and cauterization with nitrate of silver; and two by free division of the sphincters. The details of these cases are less minute than the pathologist would desire.

Passing over the tenth and eleventh chapters, on neuralgia of the rectum and spasmodic contraction of the sphincter ani, which are rendered unsatisfactory by defects of system and diagnosis, we come to ulcers of the rectum, such as are produced by inflammation and the entanglement of feces in the lacunæ. Some rather interesting cases are mentioned. They were treated in the manner generally employed in similar ulceration in other parts, except that in several instances the sphincters were divided laterally through the ulcerations. The author states that he had seen one case of death from many and small ulcers of the rectum. The patient had been treated in India for dysentery, but, on examination after death, the colon appeared healthy.

After a single page on venereal ulceration of the rectum, our author takes up the subject of hemorrhoidal affections. In the remarks on the hemorrhoidal flux there is nothing to arrest attention.

Dr. B. appears not to agree either with those who believe in the varicose origin of internal hemorrhoidal tumours, or with those who consider these enlargements as erectile cavities caused by extravasation; he regards them rather as proper tumours of a highly vascular kind.

"I have frequently dissected them with the greatest care, and found that they were spongy, reddish, and contained both arteries and veins, the latter being the most capacious, *but always perfectly healthy*.

"Their surface is villous, and generally bleeds when touched roughly or scratched with the nail; the blood which issues being of a florid red colour. In many instances I have been able to rub off exceedingly vascular and fragile adventitious membranes from their surface. Thus it would seem that they may acquire an increase of magnitude in this way."—p. 152.

In this description of the ordinary structure of internal hemorrhoidal tumours we perfectly coincide, but it is well known, and apparently acknowledged by Dr. B. (Chap. xv. p. 197,) that tumours consisting of mere venous enlargements are seen in the same situation with regular internal piles; and as many details with regard to treatment may be determined by this difference of structure, it is to be regretted that the diagnosis of these affections is not drawn with sufficient accuracy, and that the two figures in the third plate, which are intended as illustrations of the distinction, possess but very little character. Scarcely any allusion is made to those extensive varicosities which sometimes occupy a large portion of the parietes of the rectum, and are generally mistaken for hemorrhoides.

In speaking of external piles, our author seems to have lost sight of the fact that, like those which are internal, they are sometimes varicose, sometimes strictly erectile, and sometimes due to extravasation.

"They are more or less livid, generally elastic, have an extensive base, and

are formed of extravasated blood, which is encysted by condensed cellular tissue, and covered by a few fibres of the sphincter and firm skin of the verge of the anus. * * * Sometimes the blood is absorbed, leaving no trace behind; occasionally, however, in consequence of the first, but more especially of repeated attacks, the superincumbent integuments and surrounding cellular tissue become hypertrophied, and pendulous flaps or tumours, which, in some instances, from the friction they are exposed to, obtain a rough or warty aspect, and become a source of great irritation. It not unfrequently happens, that when there is but one large tumour, it suppurates, and then gradually shrinks up."—p. 163.

Here we observe a description of only one form of external pile, analogous in cause with the preternatural pouches of Dr. Physick, but different in position and result. The latter are confined to the middle region of the anus; they open usually by a single small orifice, and instead of forming abscesses, remain in an indolent condition as torpid sacs unless occupied with foreign matters, in which case they produce terrible uneasiness, but shew little disposition to unite by inflammation or to terminate in fistula. They are scarcely curable except by the complete excision of their thin internal walls. The former, on the contrary, originate in and are chiefly confined to the lower region of the anus, are disposed to open by several orifices, often terminate in occult or complete fistula, readily become inflamed, and unite when freely opened and completely evacuated. See American Cyclop. of Pract. Med. and Surg., art. *Anus*.

We do not like the division of hemorrhoids into the internal and the external—it is too artificial; and whenever an external tumour of the varicose or strictly erectile character is observed, we are almost sure to find the disease extending throughout the whole canal of the anus. This should be borne in mind in selecting the proper mode of operating in each case.

After dwelling at considerable length on the causes of hemorrhoidal affections, and their general treatment, the author passes to the subject of operations. His dread of hemorrhage from rectal operations,—the result of experience,—appears to have been considerable, and he is a strong advocate for the ligature in preference to the knife. Some of the more important objections alleged against the former, are combated with candour, but we are struck with that want of analytical acumen in determining the precise cases to which the one or the other mode of operating is applicable, which is observable in most writers on the diseases of the rectum and anus. It is now well known that accidental erectile structure bears the ligature well, when the parts are not materially diseased; and it is equally well known that varicosity of the veins endangers the occurrence of phlebitis under the application of ligatures. We have been long anxious to obtain authentic materials to warrant some rational conclusion as to the relative dangers of bleeding and inflammation in the two modes of extirpating anal tumours; but the work before us furnishes no such data. The pain of the ligature is one of the greatest objections to its use; but this pain is comparatively trivial, in most instances, when the entire grasp of the loup is above the lower margin of the internal

sphincter; when below that spot, it is terrible. This distinction is not drawn with sufficient emphasis by Dr. Bushe, and we think it was incumbent upon him, from his position, to have been aware of the beautiful method of Dr. Physick for avoiding the exquisite suffering attendant upon the ligature when it includes the whole of a tumour which is partly above and partly below the edge of the sphincter just mentioned. This plan consists in dividing with a scalpel the integuments round the base of so much of the tumour as is covered by the skin, leaving intact that which is invested with mucous membrane; the ligature being then applied in such a manner that it traverses the superficial incision without including any portion of the exquisitely sensitive skin. By this plan we have all the safety of the ligature with scarce the tythe of its painfulness when used in such cases according to the ordinary method.

This chapter contains descriptions of some novel modifications of instruments for seizing the tumours, for passing the ligatures, and for arresting the hemorrhage by means of pressure with an inflated intestine—(pp. 185–189, and pl. ix., figs. 1, 2, 3, 4, 11, 12.) We shall not pause to analyse these instruments, as none of them are novel in principle, and all will be better understood by a glance at the figures than by verbal description. They are ingenious, and probably convenient, but do not strike us as very necessary.

When a surgical operation becomes essential to the retention of an established prolapsus ani, Dr. Bushe recommends the plan advocated by Howship, Calvert, Mayo, &c., which consists in taking up by ligature, and then removing by the scissors one or more small portions of the mucous membrane in order to establish adhesions, after reduction, at each of the spots selected. We have stated our reasons for opposing this operation in an article to which we have already referred on more than one occasion, and do not deem it necessary to repeat them here. When the method of Howship (or Heavisides) does not succeed, our author advises the well known operation of Dupuytren, which consists in removing by the scissors a sufficient number of the longitudinal folds of the anus; but by a culpable feeling of nationality, he shows a disposition to rob the French surgeon of his merits in favour of his almost equally eminent countryman, Hey of Leeds, by confusing in the strangest manner the plans of both these operators, though they are obviously and widely different. The rude excision of the whole flap, by the latter, is as unsurgical as the beautiful process of the former is neat and appropriate. If precedence in the establishment of the principles involved in these operations be contested, the claim must be awarded to neither of these gentlemen, but to Cheselden, who removed a linear portion of the flap with “a caustic.”—p. 209.

We find nothing demanding especial notice in the succeeding chapters on relaxation of the anus and rectum, pruritis, excrescences and polypi. They are all exceedingly short and imperfect. We might add to the list the much more considerable chapter on abscess, after censuring, as in duty bound, the very artificial nosological arrangement;

but it seems proper not to pass over without comment the practical directions contained in the following passage on what is termed acute gangrenous abscess."

"Should the skin and cellular tissue be destroyed, as described at page 234," (cases of extensive denudation of the rectum and sphincters) "the tonic course which we have now mentioned, ought to be continued until the health improves, when it will be necessary to perform an operation to remedy this state of disease; for the contraction of the sphincter, by separating the intestine from the walls of the pelvis, will render reparation impossible. The operation which I have performed in these cases consists in passing Dessault's wooden gorget into the anus, and then carrying the bistoury into the chasm, I divide the sphincters on it, to the verge of the anus. Should both sides be affected, I treat them in the same manner. I then pass a ligature through the angle of each flap, and plug the intestine with lint. Finally, I fasten the threads by means of adhesive plaster, to the buttocks. In this way the gut is prevented from retracting, while it is well pressed out towards the hips. In a few cases I have omitted the ligatures, but not without having had to regret it."—p. 243.

The anthracoid abscesses of the buttocks are circumscribed, and are not prone to denude the rectum. They probably never reach this intestine on both sides in the same case, and they are not, therefore, of a character to require the operation just described. The acute and chronic gangrenous abscesses of authors, beginning deep in the pelvis, are extremely rare; and a considerable number of the cases which have been observed, have been complicated with a false passage in the rectum; or, in other words, they have been stercoraceous and fistulary. It is needless to point out the reason why a division of the rectum from the internal orifice to the anus is adviseable in such cases.

The most common cause of extensive sloughing about the anus, is the diffuse inflammation of the cellular tissue described by Duncan, or what has been strangely called erysipelas phlegmonoides. This is not a very rare affection. It spares (as do probably the other species mentioned, in most instances,) the muscles, with their attachments, and the muscular coat of the rectum. The description of the affection in which Dr. Bushe operates in the manner above described, as given in pages 233 and 234, is obviously drawn from cases of this diffused inflammation. We are familiar with it, and in two instances have beheld much wider destruction of parts than occurred in the case selected by Dr. B. as an illustration: plate vi. fig. 3. We are compelled to believe the practice under notice calculated to enhance the difficulties of treatment. The power of reproduction, in places occupied with very rare cellular tissue, is almost as remarkable as the facility with which these parts are destroyed by gangrene; and when the integrity of the rectum is preserved, it does not appear reasonable to expect much difficulty in the reunion of gangrenous abscesses which have not been allowed to degenerate after a lapse of considerable time, by a neglect of proper treatment. The records of surgery do not furnish conclusive evidence of the existence of such difficulty, in the history of well observed and dependable cases; and in all the instances presented under our own observation, the reunion has been fully accomplished without the necessity of any incision. The peri-

neum has been much deformed by the contraction of the cicatrices; but as these tend not to contract, but rather to dilate, the anal passage, so long as the canal preserves its integrity, they do not appear calculated seriously to embarrass defecation. While the external sphincter retains its anterior and posterior connexions, the rectum cannot be retracted to an inconvenient extent, and such is the condition of this muscle in a vast majority of cases. The four simple gangrenous abscesses of the anus which we have met with, have all been cured, and well cured, without any instrumental aid other than free external incisions. So much for the *necessity* of the operation practiced by our author; but there are other direct objections against it. The lateral incision of the denuded sphincters at once destroys a portion of their power to antagonise the levators of the anus, and thus the disagreeable retraction of the rectum, alluded to by Dr. B., must occur, unless partially prevented by mechanical means. The ligatures employed for this purpose cannot answer their intention fully; for, if passed through the mucous membrane, they will rapidly ulcerate out, and if secured to parts beneath the margin of the internal sphincter, they will prove a source of dangerous irritation. When erysipelas, the most frequent cause of this kind of abscess, or when a gangrenous tendency is generally prevalent in hospitals or neighbourhoods, the application of either ligatures or adhesive strips, such as Dr. B. recommends, is found to be seriously objectionable, as such measures often *produce* the disease, and always *exacerbate* it. But the very principle upon which the propriety of dividing the sphincters is defended, is one totally at variance with the practice. The direct effect of the incision is to allow the anus to be drawn by muscular contraction toward that side, or toward those portions of the pelvis which are opposite to the cavity or cavities produced by the gangrene. There is no developement of the anal canal, but rather a contraction of its walls by the cut fibres of the sphincters, and the space required to be filled up by granulations is increased instead of being diminished. If any thing can be gained by stuffing the pouch of the rectum with lint, as directed by our author, (which we do not credit,) this manœuvre can be practiced quite as successfully without dividing the sphincters; and then it would be free from the obvious objection that the lint assists the muscles in forcing the anus out of its natural position, to which it can never be properly restored by the irregular contraction of the cicatrices. There are other, and still stronger arguments against this practice, but we will leave them to the penetration of the reader. The operation is a relic of the errors of a darker age; it was devised by Faget, and advocated in a paper in the memoirs of the old Royal Academy of Surgery, (tom. i. p. 289, edit. in 8vo., Paris, 1819;) a paper which has exerted a strange influence over the views of most succeeding surgeons, though it contains exceedingly little, either in the way of fact or argument, to entitle it to such respect. We protest then, against the division of the rectum or anus in abscess, unless when coupled with false passages into the intestine, or when the cavity

is of long standing, and its lining membrane has undergone the mucoid transformation which reduces it to the condition of a fistula.

The chapter on fistula is based chiefly on the paper of Mr. Ribes, but Dr. B. differs from that author on one point. He advocates the division of the external, and a part, or the whole, of the internal sphincter in some cases of incomplete fistula.—p. 252. We fully concur in the propriety of making a counter opening into the anus, in those incomplete fistula which detach a considerable portion of the mucous membrane from the muscular coat of the rectum, passing between the external sphincter and the integuments of the anus, and proving obstinate under other modes of treatment; but we have never seen, and should doubt the occurrence of, cases of incomplete fistula demanding a division of any considerable number of muscular fibres for the mere purpose of establishing a free communication between the fistula and the rectum.

In operations on fistula, Dr. B. steadily prefers the knife to the ligature; but, like Ribes, he directs that the incision should never be extended higher than the upper margin of the internal sphincter. He never met with an internal orifice situated above that line.

After a very short chapter on contraction of the anus, Dr. B. enters upon the subject of stricture of the rectum, which is treated rather more at length. This chapter will repay the reader with some notes of personal experience not altogether without value. It contains also a notice of a modification of Sir Charles Bell's ivory dilator, consisting of an elliptical ball of ebony mounted upon a long stalk of whalebone, which can be bent by the index finger while in the rectum, so as to bear directly upon a stricture in any part of its rout; an instrument greatly preferable to the bougie in many cases. A more complex metallic dilator on the principle of the expanding specula is described and figured. Dr. B. urges caution in its employment, but has reaped great advantage from it in some cases; we cannot pretend to express an opinion on its merits without the opportunity of examining, and perhaps testing models. Our author candidly states that he has never succeeded in curing stricture of the rectum.

"To be brief, I know of no patient who was able to leave off the use of the bougie for any time, without an increase or return of his complaint."—p. 287.

The work is concluded by a few remarks on the carcinomatous degenerations of the rectum, with a case in which the author extirpated a cancerous tumour involving the anal canal. The patient continued well for a few months, but died in the country seven months after the operation. Six or eight arteries were tied in this case, and the control over solid feces was not entirely lost.—p. 295. Several of the more important diseases and accidents mentioned in the work, are illustrated in seven coloured lithographs, and two other plates contain figures of the several instruments employed by Dr. Bushe. To be really valuable, figures of morbid parts require to be executed with great care, in order to exhibit the characteristics of the disease intended to be represented; those appended to the treatise before us are certainly not commendable for their fidelity.

The death of an author who has held an important position before the public, seems frequently to attach an undue, or at least, an increased weight to his opinions, and much as we feel disposed to deal kindly by the memory of the departed professor and very extensive practitioner whose labours have been canvassed, justice to the profession demands the statement that, as a record of personal experience, this work is meagre to a degree that is surprising when the opportunities of the writer are considered; and that, as a compilation, its details cannot be considered sufficiently ample to possess a very great degree of interest.

R. C.

ART. XIII.--*Facts and Cases in Obstetric Medicine, with Observations on some of the most important Diseases incidental to Females.*

By J. T. INGLEBY, Member of the Royal College of Surgeons, London; Senior Surgeon to the General Dispensary; Surgeon to the Magdalen Asylum; and Lecturer on Midwifery at the Royal School of Medicine, Birmingham. 8vo. pp. 296. London: Longman & Co.

It is gratifying to perceive that Obstetric Medicine is beginning to engage the attention of physicians to an extent corresponding with its great importance. Certainly no department of the healing art has been more neglected, even by those whose especial duty it was to cultivate and improve it. Within a few years, it is true, we have been furnished with several truly valuable treatises on the diseases peculiar to the female sex, calculated to supply, in some degree, the very great deficiency which had previously existed. The writings of Gardien, Capuron, and Duparcque among the French, and of Mansfield, Clarke, Gooch, Blundell, and some others among the English, and Dewees in this country, have introduced more correct views in regard to the causes and nature of the diseases of women, and discarded, in some measure, the empirical means formerly too generally relied on for their cure. The field nevertheless is a broad one, and abundant space for cultivation remains in it still, for all such as may be disposed to toil for its fruits. An educated mind, trained to observation, and controlled by a proper regard for the opinions and experience of others, when associated with the industrious habits of such a writer as Mr. Ingleby, will never fail to excite a due degree of interest for any subject upon which its labours are employed. This particularly is true in reference to the work before us. The author, although not connected with any large hospital, gives proofs in the numerous cases which he cites, of extensive observation, derived from his private practice, and the large consultation business which a high character among his neighbouring practitioners has secured to him. In these respects, his experience is drawn from the same sources as that of Dewees. Such

opportunities are not of very common occurrence; while facts so derived, in our estimation, are greatly preferable to the conclusions drawn exclusively from hospital reports, not only from the admitted character and experience of the observer, contrasted with the youth and inexperience of those upon whom the labour of recording the histories of cases commonly devolves in public institutions, but also from the broken down constitutions and irregular habits of such as ordinarily resort to the wards of the latter; circumstances which it is well known often so mask and complicate diseases, and modify the effects of remedies, as to afford but dim lights for general guidance. The work, of which we have given the title above, is comprised in seven sections. The first three, and a portion of the sixth and seventh, have been published before, "but now appear in a revised and greatly enlarged form."

The *first section* is occupied with the consideration of *puerperal convulsions*. Certainly no subject of deeper importance occurs within the range of obstetric medicine. On this account, and to enable our readers to appreciate the author's views, we shall notice the prominent points connected with it, with less than our accustomed brevity.

"The term *puerperal convulsions*," the author thinks, "should be confined to cases occurring in paroxysms affecting the contractile tissues generally, and, in many respects, resembling epilepsy, although the attack cannot be regarded either as apoplectic, epileptic, or tetanic, but partaking more or less of the character of each of these diseases."

The circumstance of blood-letting proving so efficacious in puerperal convulsions, in the author's opinion,

"Militates strongly against its genuine epileptic character, for bleeding in common epilepsy is usually injurious; neither is the subject of puerperal convulsions left exposed to attacks of chronic epilepsy."

"The hysterical species, in its mode of attack, duration, degree, violence, and the perfect recovery of the patient on the subsidence of the fit," he remarks, "is so very different from eclampsia, that a man must want common sagacity to confound the one with the other. As for the apoplectic species, without sanguineous effusion, it is really a distinction without a material difference; it differs only in degree, and usually appears during labour."

The author unites with Dr. Blundell in attributing convulsions, "in most cases, to increased action of the cerebral vessels:" although he admits, with Andral, "that states of anæmia, as well as of hyperæmia, are equally productive of convulsions."

"Allowing, therefore, for complications and variations of constitutions, the more important convulsions of the puerperal state may be referred to two principal and opposite conditions of the system; either an excited or turgid state of the vessels of the brain (often promoted by improper diet, and a neglected state of the bowels during gestation) or by loss of blood, as after a dangerous hemorrhage. There is also a third state, subordinate to those just mentioned, and which seems more immediately dependent upon excessive sensibility of the uterine fibres, since it generally happens under an irregular and highly painful action of the uterus during its dilatation."

That the different "conditions of the system" pointed out by the author, do strongly predispose to convulsions, will be admitted by all who have had much experience in the management of parturient women: but it does not appear to us that the intelligent author has

clearly indicated the lesions, or organic changes which constitute the pathology of these "different conditions," nor, consequently, the discriminating signs by which they may be discerned. Without this knowledge we cannot hope to arrive at a rational and successful plan of treatment.

The following observation we doubt not will appear to our readers, as it does to us, extraordinary and unreasonable, viz:

"Not only does the attack usually occur in first pregnancies, but, what is remarkable, with very few exceptions, almost always when the presentation is natural. Where the presentation is preternatural, there is little cause (says Collins) to dread the attack."

That convulsions happen much more frequently during first than during subsequent labours, is consistent with reason and every day experience. The more violent and protracted efforts of the uterus necessary during a first labour to overcome the natural rigidity of the soft parts, with the anxious uncertainty usual in those who have never experienced such suffering, are alone sufficient to account for the more frequent occurrence of convulsions then than subsequently. But that a *preternatural presentation* should afford any immunity from such attacks, we cannot for a moment concede. Convulsions during pregnancy and labour, are not of very frequent occurrence; neither are preternatural presentations; and the concurrence of the *two unusual circumstances* in the same case, is likely to be rare indeed. But as the labour is certainly rendered more difficult in preternatural presentations, the danger of convulsions and every other bad consequence must be proportionally increased. In fact, the author admits this position when he afterward says that "convulsions which arise after the os uteri has acquired a moderate degree of dilatation, may sometimes be traced to malformation either of the pelvis or head of the infant." Now such malformations do not predispose to the attack of convulsions, excepting so far as they increase the duration and intensity of the uterine efforts.

Entertaining the opinion we have quoted, that puerperal convulsions are to be attributed to "increased action of the cerebral vessels," the author advocates blood-letting both as a preventive and curative means. "Even under a strong predisposition to convulsions," he remarks, "the attack may generally be prevented by bleeding, daily laxatives, a simple diet, and mental quietude." Whenever the face and extremities become œdematous in the latter months of pregnancy, or

"Whenever a woman has been the subject of puerperal convulsions, the necessity for adopting these precautions in a subsequent pregnancy, especially towards its termination, and for maintaining tranquillity of the circulation, must be obvious. Generally, however, as depletion is now practiced, its efficacy in removing the paroxysms and permitting gestation to proceed, is either not acknowledged, or not estimated according to its high and practical importance."

After the high authority of Hamilton, Denman, Dewees and others, in favour of copious bleeding, adduced by the author himself, we cannot admit that the efficacy of the remedy "is either not acknowledged or not estimated according to its high and practical importance."

The natural inference from the remark would seem to be, that *he* bleeds with an unsparing hand. Like some others of equally high pretensions, it is to be feared that in this respect he is an ultra advocate for a remedy which is certainly not less potent for evil than for good.

Reposing the highest confidence in its value, in vigorous constitutions, or in those not already greatly debilitated by sedative causes, we are, nevertheless, satisfied that we have seen it carried much too far, even in the most favourable subjects. Admitting with Blundell, as we do, that the proximate cause of the disease consists in a turbulence of the cerebral vessels, it should never be forgotten that that condition is not unfrequently associated with an opposite state of the vascular system in other parts, and that large bleedings under such circumstances are more likely to aggravate than to relieve the evil. The testimony of Gooch, that he never saw a single patient die from convulsions, "unless the lancet had been unemployed, or employed insufficiently," is expressed in strong terms; but in our opinion, in respect to very large bleedings, the experience of Merriman, Mauriceau and Madame Lachapelle, is at least of equal force in favour of a more restricted use of the lancet. The experience of the sagacious Denman, cited by our author, that the heart may be unusually flaccid, while there is extreme fulness in the cerebral vessels, should admonish us on this point. Although the patient may not be immediately destroyed by the excessive depletion, her life will be endangered from effusion consequent upon it, in the ventricles of the brain or other important cavities.

On the propriety and importance of artificial delivery, the author makes the subjoined judicious remarks:

Quoting from the paper of Mr. Symonds, contained in the London Lancet, "Instructed by my own experience, and fortified by the authority of such writers as Denman, Blundell and Gooch, I should say with the latter, take care of the convulsions and let the uterus take care of itself."

"In this," says Mr. I., "as a general principle, I quite concur; but exceptions to it may arise. When the attack appears during actual labour, our line of practice is clearly defined; we must moderate excessive action, and deliver on the first favourable moment. But should the convulsions *precede* labour, the practice pursued by Dr. Joseph Clarke (very similar to that recommended by La Motte) is the most rational that can be followed, viz., to trust to nature's efforts, aided by medical treatment, until the patient's life appears to be *immediately* endangered by the continuance of the disease, and then to interfere in the speediest and safest manner to promote delivery. The circumstances which justify interference, demand an impartial and dispassionate consideration, and should embrace the state of the uterus, the presentation of the foetus, the period of gestation, and the violence of the symptoms."

The author is of opinion, that

"The want of success in delivering, generally arises from one of two causes; the first, delivering too early, before the uterine orifice has undergone sufficient relaxation; the second, postponing the delivery until effusion has taken place, or a fatal impression been made upon the brain. Previous to delivery being attempted, sufficient relaxation of the uterus must therefore be obtained by

bleeding or emetic medicines in nauseating doses, purgative enemata, and perhaps the application of belladonna to its orifice, otherwise we incur the risk either of an apoplectic seizure, or a laceration of the uterus or vagina."

Although the preceding remarks contain nothing that is particularly new, they at least inculcate sound practice, which is of far more importance.

The remarks on convulsions are closed by an account of thirty-five cases, which occurred under the notice of the author and his friends. Some of these happened during pregnancy, many during labour, and others subsequent to delivery; the greater number of the patients recovered. Of those cases which terminated unfavourably, but few were examined after death, in consequence of the opposition on the part of their friends. This shows a state of feeling in that country very unfavourable to the prosecution of pathological inquiries, the more to be regretted, because of the number and intelligence of those capable of conducting such investigations, to the honour of science and the benefit of the human race.

Of the autopsies reported by the author, effusions in the ventricles of the brain, and sanguine congestions of its vessels, were very commonly observed; we recollect, indeed, but a single exception.

In a note subjoined to this section, Mr. Ingleby speaks in the highest terms of "tartarized antimony in the sthenic form of eclampsia, the attack taking place within a very short period after delivery."

"The agency of this medicine," he observes, "is of singular value; for, whilst it lowers inordinate action, it does not produce those distressing secondary effects which follow large bleedings. Although the emetic tartar cannot be regarded altogether as a substitute for bleeding, the repeated employment of the lancet becomes in a great measure unnecessary, provided, indeed, the influence of the medicine is maintained over the system until the activity of the disease is overcome."

The *second section* is "on malposition of the uterus, ovaria, bladder, and urethra, both in the impregnated and unimpregnated state, in connexion with retention of urine," and contains many interesting facts and judicious remarks; but nothing particularly novel or striking.

Section third treats of "obstructions in the soft parts to the progress of labour." The subjects which it embraces are organic defects, as tumours—labial, vaginal, and uterine; contractions of the orifice and canal of the vagina, protrusion of the bladder and rectum, &c. The consideration of these properly belongs to the department of special surgery. Although somewhat desultory in its character, the section is creditable to the industry and sound practical knowledge of the author.

The *fourth section* is "on induction of premature labour in cases of organic disease."

Dr. Merriman long since laid it down as a rule, that the inducement of premature labour by art ought to be strictly confined to cases of distorted pelvis. Dr. Ashwell has extended "the principle to cases in which tumours have formed within the uterus, or in connexion with enlargement of the ovary, and also to extraneous growths in the

vicinity of the uterus, such as are liable to inflame during gestation, or calculated to offer a formidable obstacle to parturition."

Mr. Ingleby, while he seems to think the rule prescribed by Dr. Merriman may be advantageously extended, entertains doubts whether the facts furnished by Dr. Ashwell in support of his views, "afford sufficient data to establish as a general principle, the adoption of the proposed measure in similar cases" to those contained in his paper. The section before us is devoted to a consideration of the various circumstances under which "the proposed measure" may be deemed advisable, and embraces some interesting facts; but we have not discovered that they have led the author to very distinct or methodical conclusions. So numerous are the diseases to which the human female is liable, and especially her genital organs, and so various the circumstances of individual cases, that it is impossible to lay down any very strict rules for their management. We can only agree on general principles; but at last, every case of malformation, or structural change, must be examined and decided on its own merits, under the guidance of an enlightened experience.

The *fourth section* is "on laceration of the uterus and vagina."

The occurrence of laceration of the uterus and vagina, has hitherto been regarded as extremely unusual. In the United States but very few cases have been recorded. There is reason, however, to believe that too frequently it takes place without being suspected; particularly among the inmates of almshouses and the operatives of large manufactories. According to our author, "their comparative frequency, which is by no means well ascertained, is said to vary from one in three hundred to one in four thousand cases." Of the sixteen thousand four hundred and fourteen deliveries in the Dublin Lying-in Hospital during the mastership of Dr. Collins, thirty-four suffered lacerations of this kind, being an average of one in four hundred and eighty-two.

Mr. Ingleby is "disposed to regard their occurrence as much more frequent than is generally believed, and as connected with sudden instances of death." "On general principles," he observes, "it might be inferred that lacerations would arise more frequently in first than in subsequent labours; but the contrary, I believe, is the truth." In proof of this position he cites several very respectable authorities, and Ramsbotham in particular, who "never met with an instance of ruptured uterus in a first lying-in." The following remarks of the author on this subject, contain his views of the cause of this difference.

"An opinion has prevailed that the uterus will sustain with impunity a more powerful contraction in a first labour than its textures are afterwards equal to, that these textures become impaired by frequent child bearing, and easily lacerate, but the deduction is unsupported by evidence. In the disease termed *malacosteon*, the sacral promontory undergoes a sensible change in its figure, *antecedent* to any apparent softening of the pelvic bones in general, and the reason is obvious. This yielding, which is at first very slight and is arrested after delivery, returns with a recurrence of pregnancy, rendering each act of parturition more difficult. Thus we understand why lacerations occur more

frequently in women who have borne children, than in primiparæ; and the explanation is far more consistent with the principles of physiology, than to ascribe the injury to attenuation of the uterine tissues."

The author, however, does not deny that rupture may arise from a diseased condition of the uterus or vagina; and he expressly mentions cases in which it occurred from convulsions, and irregular contractions of the uterus. He also points out with great force the danger of suffering a patient to struggle unavailingly, where the disposition between the head and pelvis is such as to forbid the hope of speedy delivery by her own unaided powers.

"It is impossible," he remarks, "to read attentively many of the cases hitherto recorded, without being able to trace the laceration to a *direct* impediment affecting the progress of labour. Impaction, properly so called, is inseparable from danger, and may be regarded as a test of the practitioner's skill and discernment."

The justness of these observations must be admitted by every one. No experienced practitioner can have failed to observe many deplorable instances of long continued uterine efforts, exhausting if not destroying the patient, where it was impossible for the head to pass through the pelvis; and if lacerations have not more frequently occurred, it is perhaps scarcely less a subject for regret than surprise—regret, for the poor subjects who, instead of being speedily relieved by the hand of death, have only been doomed to suffer further torments, without a better result.

In the *sixth section*, which is on "*inversion of the uterus*," we find little that is new, although much to commend.

The author is an advocate for the return of the uterus, even after a considerable lapse of time. In support of his views, a very interesting case is related, in which he succeeded in the reduction eight days after delivery. He "found her nearly without pulse, exsanguine, comatose, delirious on being roused, and apparently moribund." The patient recovered.

The *seventh and last section* is "*on the signs and symptoms of pregnancy—their obscure and deceptive characters—their complication with disease, and the signs which denote the extinction of life in the fœtus.*"

The subjects embraced in this section alone, if fully considered, would occupy a volume; of course the present commentary is necessarily brief, being comprised in about sixty pages. Much of this likewise consists of matter already before the public, arranged according to the author's peculiar views, and illustrated by facts drawn from his own experience. From the latter we shall select a few points of more prominent interest. In addition to the swelling of the breasts and areola around the nipple, as indicative of pregnancy, he adds two other changes, which we have not been accustomed to notice.

"The first consists of a very scaly state of the cuticle covering the areola; the second, in a discoloration, not very unlike the areola, and partially affecting the whole surface of the breasts. The breasts present a curious mottled or checkered appearance, of an irregularly brown hue, with intervening spaces, defined in extent, circular in form, and as white as the skin over the body in general. The last mentioned appearance is strongly presumptive of pregnancy."

According to the author's observations, although a single attack of hemorrhage may not only destroy the embryo, but also the mother, in the early weeks of pregnancy, "a protracted hemorrhage may not necessarily destroy the foetus or terminate in abortion, notwithstanding the well known tendency." "Or the foetus may perish, and yet be retained in utero until the ninth month." In relation to twin cases, we find the subjoined curious statements, which are deeply interesting in many respects.

"Whatever may be the condition of the dead foetus, the tenantry of the living one, even up to its maturity, may in no respect be affected. A few weeks ago, on examining a mature placenta, the expulsion of which was attended with severe hemorrhage, a foetus of four or five months' growth, flattened, but not putrid, was found within the membranes, closely adherent to the uterine surface of the mass; and yet a full sized living child, in connexion with this placenta, had just been expelled. It is singular that, although the placenta consisted of one solid mass, (not two placentæ connected by membrane,) one half of the mass, and the small foetus attached to it, are reduced to a white substance, the line of demarcation between the dead and the living portion being very apparent. It could not have been exposed to atmospheric influence. When abortion happens in the middle months of gestation, the retention of the placenta is of frequent occurrence. On the expulsion of a twin, three, four, or five months old, having its own proper membranes and placenta, the uterine orifice may close quite as promptly, without any suspicion being raised of the presence of a second ovum; and if the woman be corpulent, the bulk of the uterus may not be easily determined. After the expiration of a given period, varying from a few hours to a few days, the uterus will probably expel the second ovum, and thus a charge of ignorance may be most unjustly and vexatiously preferred against the practitioner; a circumstance which I know to have occurred. In cases similar to this a difficulty respecting the vitality of the foetus yet in utero is likely to occur. On the expulsion of a large mole or a diseased ovum from the uterus the same difficulty may arise, supposing a foetus enclosed in its proper membranes to be still retained. Of this complication my own practice has furnished a striking example. After a long continued hemorrhage, a diseased placenta (of the grape kind) was cast off, but without any apparent foetus; the os uteri closed, and, to the surprise of all parties, the patient was delivered a few weeks afterwards of a mature child and secundines. From this case, and several others of a similar kind, we see the propriety of carefully ascertaining the *bulk* of the uterus whenever any large substance has quitted its cavity—the practitioner's reputation may suffer by the neglect."

We have quoted the preceding observations, not only because of the infrequency of the circumstances detailed, but for the important practical instruction contained in the closing remark.

The author speaks in terms of great confidence of the stethoscope in determining the existence of pregnancy, as well as whether the foetus is a living one; but some of his observations are rather calculated to lessen its importance, at least when compared with other means. Thus he remarks that he has in repeated instances distinctly detected the placental soufflet (on one or both sides of the uterus) and the pulsation of the foetal heart, by means of the stethoscope, as well as by the naked ear. "But the soufflet is common," says the author, "to several diseases, and is, therefore, an uncertain evidence of pregnancy, although Drs. Ferguson and Kennedy think otherwise."

The sound of the foetal heart, he contends, "is never with *certainty* heard before the fifth or sixth month," at least he has not been able to distinguish it at an earlier period.

"In a case of Cæsarean operation the foetal heart could not be heard to pulsate, notwithstanding a most minute examination by several practitioners. The patient persisted, however, that she felt the child move, and it was extracted alive."

If the foregoing facts be established, the value of auscultation, in reference to obstetrics, is greatly diminished. For it must be a rare case indeed, when an experienced practitioner cannot detect the existence of pregnancy before "the fifth or sixth month," without the stethoscope, or any other means of auscultation. And as to the matter of the child's life influencing the course of practice in difficult cases of labour, we hold it to be greatly overrated.

The propriety of the rule which prescribes that the life of the mother must never be jeopardized for the welfare of the unborn child, will hardly be disputed by any one. This being admitted, it is only where we desire to abridge the sufferings of the patient, as in cases where it is supposed that the forceps or long continued uterine efforts would enable her to deliver herself that it becomes a point for consideration. In such a case, if assured of the child's death, a resort to the crotchet, by lessening the head, will facilitate its delivery and shorten the patient's sufferings. But here an experienced practitioner rarely fails to discover whether the child be alive by ordinary means; and it is precisely the situation in which it is admitted that auscultation is least to be relied on, in consequence of the position of the child among the bones of the pelvis, and the controlled state of its circulation from the action of the uterus upon it. Let us not be understood as discouraging stethoscopic or other means of auscultation in our art—far from it—we only wish to guard the inexperienced from an implicit reliance upon it, in *opposition* to other evidences, or in a too confident dependence upon it, in the *absence* of confirmatory proofs. Let no man puncture the cranium of a child, because he cannot discover the beating of its vessels—other evidences and weightier reasons are necessary. Let it be recollected that some of the most eminent members of the profession have occasionally failed to discover either the placental soufflet or beating of the foetal heart, where time and events proved their existence. Mr. Ingleby cites Ryan, Capuron and Velpeau of this number, and he might have greatly extended the list. We should not deem these cautionary observations necessary, but auscultation is not only *new*, but *fashionable*; and we have lived to see that if some men "prefer old errors to new truths," there are others not less attracted by novelty, who are prone to rely too sanguinely on new means and hastily formed opinions.

R. M. H.

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ART. XIV. *Des Pertes Seminales Involontaires.* Par M. LALLEMAND, Professeur à la Faculté de Médecine de Montpellier. Paris, 1836: 8vo. pp. 312.
On Involuntary Seminal Discharges. By M. LALLEMAND, Professor in the Faculty of Medicine of Montpellier. Paris, 1836: pp. 312.

It is not a matter of every day occurrence for us to meet with a work replete with new facts, and illustrating important practical applications of pathological phenomena. When we find a rarity of this sort we know how to value it, and eagerly receive the new and welcome addition to the science. Amongst this valuable class of new works the memoir of Professor Lallemand must certainly be placed. It throws a new light upon a variety of disease which is always obscure, and which is sometimes so concealed by its protean and variable symptoms, as to elude the observation of physicians whose knowledge and experience give them a high and deserved reputation.

Of late years the most accurate and classical works have chiefly tended to increase the precision of our diagnosis and to extend the limits of pathological anatomy. They are therefore most useful materials, upon which a superstructure of practical therapeutics will probably be soon erected; but if physicians turn to them in the hope of suddenly acquiring new and more successful methods of treating the diseases, with which they are already to a certain extent familiar, they are very generally disappointed. From this deficiency of practical knowledge suited for immediate application, some physicians scarcely admit the utility of many scientific truths, and are therefore disposed to undervalue the labours of the patient inquirer who contents himself with the pleasure of discovering a new class of facts, which have only a remote connexion with the strictly practical part of our profession.

Dr. Lallemand has fortunately done more, than illustrate the pathology of disease. He has indicated the best method of treatment, and he has proven by a reference to facts, that the results of treatment are vastly more certain and satisfactory than they are in most diseases. We shall give his own account of the process by which he arrived at these conclusions.

"In the space of from thirteen to fourteen years, I have noticed more than one hundred and fifty cases of involuntary seminal discharges, of sufficient severity to greatly derange the health of the sufferer, and even to cause death."—"The greater part of these patients were sent to me, on account of imaginary cerebral diseases of more or less standing. Thus, by a strange singularity, it was after the publication of my *Researches into the pathological anatomy of the brain and its membranes*, that I was consulted for the most remarkable cases of diurnal pollutions, and I was myself obliged to deny the existence of diseases of the brain or its appendages in many cases in which it seemed probable."

"Many other patients were supposed to have chronic gastritis, or gastro-enteritis, aneurisms of the heart, commencing phthisis, &c. &c., or else nervous affections, and, above all others, hypochondria.

"These few remarks will show that the involuntary emissions of semen are frequent, dangerous, and are recognised with difficulty; that they give rise almost every day to deplorable errors of practice; and we may already foresee that their causes are much more numerous than is usually believed, and that the treatment must often present many difficulties." * * * * "I am writing for practitioners. They only, perhaps, will feel the importance of so many varied observations, and

will receive advantage from them; men of little experience should read them with care, and be on their guard against the influence of their imagination. Amongst those of my pupils who consulted me for seminal discharges, there were more who were frightened rather than really ill."

In a few cases, Dr. Lallemand has had an opportunity of examining the bodies of patients who died of exhaustion caused by involuntary discharges of semen, or else perished of an accidental affection during the continuance of these disorders. In such cases the orifice of the ejaculatory canals was dilated, the seminal vesicles hardened and contracted, and the prostate gland generally diseased. In several subjects the gland was filled with a multitude of little abscesses, and its whole tissue was pale and soft. The urethra was rarely free from lesions; it was thickened, and a firm and extensive stricture was found in several patients. The great liability to stricture depended upon a course which will be mentioned presently. As usually happens with diseases of the genito-urinary organs, the affection was not limited to the urethra, but extended to the bladder, and often to the kidneys. This extension of diseases renders it rather difficult for us to appreciate the exact relation between some of the symptoms, and the lesion of the urethra and seminal vesicles. It is well known that the diseases of the kidneys sometimes produce the most extensive disturbance of the nervous system, and cause a rapid deterioration of the whole economy, which ends nearly always in death. The only way to determine what part the disease of the seminal organs has had in the production of the symptoms, is to examine the succession of phenomena, and in the earlier stages of the disease endeavour to ascertain if the symptoms were more strictly local. The bladder was sometimes diseased; but it was not so frequently affected nor to as great a degree as we might have concluded from its close connexion with the seat of the disease.

The author gives nine cases with dissections, but seven of them are collected from the works of various authors, and are necessarily imperfect. Five of these cases were observed by himself, and are given in sufficient detail. In both cases the original cause of the disease had been a gonorrhœa contracted many years previously, which ended at last in continual discharges of semen without venereal desires. These discharges generally occurred while the patient was voiding his urine or going to stool, especially if constipated. The patients, like most others, lost sight of their original disorder, and complained of the feebleness of their nervous system, and the apparent apoplectic symptoms under which they laboured from time to time.

The symptoms in these fatal cases were of slow and gradual growth, very similar to those which are observed in dyspepsia and simple nervous functional disorder; and which are, of course, amongst the most vexatious complaints with which physicians are puzzled. Indeed it is evident, that these researches of M. Lallemand will furnish a key to many of those troublesome affections, and will furnish the means of a radical and permanent cure, in place of those feeble palliative means, which at last baffle the physician and exhaust the patience of the sufferer. The earliest symptoms were referred to the alimentary canal. There was obstinate constipation, difficulty in digestion, and the stomach could no longer endure alcoholic drinks, or meats which were highly spiced; there was constant accumulation of gas in the intestine; and finally coition became infrequent, incomplete, until at last, total impotency supervened. The cerebral symptoms are closely connected with those above mentioned, and sometimes occur at the same time. The patient becomes hypochondriac; avoids society; is disgusted with the gayeties in which he now takes no part; falls at last into a state of profound misanthropy, and thinks of nothing but of the dilapidated state of his health. The disorders of the intelligence present something peculiar; thus, the thread of ideas seems broken; the memory is feeble,

and the slightest mental agitation causes an immediate rush of blood to the head.

These cerebral congestions are sometimes hastened by disturbed digestion, which favours the operation of the more permanent causes. And as M. Lallemand remarks, they differ from ordinary congestions in the fulness of the pulse, the general exhaustion and anxiety, the paleness of the face, and entire prostration, *without evident local paralysis*, and without one part of the body being more affected than another. The deterioration of the health which has existed for years previously to the cerebral congestion in most cases of seminal emissions, is another very good diagnostic character between them and ordinary apoplexy. Although the intellect is not often sufficiently disturbed to give rise to delirium, there is a peculiar slowness and unsteadiness of thought, which may be obviated for the moment, by diligent questioning and recalling the attention of the patient repeatedly to the subject. We think we have seen cases of the kind, and although the general symptoms were certainly very analogous to those which result from masturbation, without inflammation of the urethra or seminal vesicles, there was usually some distinctive character which separated those affections. There is one symptom arising both from masturbation and involuntary discharges of semen, which is a sign of great importance. That is, an extraordinary anxiety and agitation combined with a strong aversion to much questioning, and great indocility of the patient. If there is no involuntary discharge of semen while the patient is awake, we should in such cases suspect the habit of onanism as the cause of all the mischief.

The author has examined the relation of the lesions found after death with the succession of symptoms. From his observations, he concludes that the cause of the chronic inflammation, and partial disorganization of the canals and seminal vesicles, resides in the inflammation of that portion of the urethra which is immediately connected with them. This part of the urethra is always inflamed in severe gonorrhœa, and what is even more essential, it continues in a diseased condition after the rest of the urethra has returned to its normal state. This local inflammation is well known to be the most frequent source of chronic gleet and half cured gonorrhœa, which torment the patient for years after the cessation of the acute symptoms. The opening of the canals upon this part of the urethra accounts for the transmission of the inflammation to the testicles, as well as to the seminal vesicles; and we agree with Dr. Lallemand that orchitis more frequently results from this transmission of the inflammation along a continuous tissue, than from any actual metastasis. The same contiguity and identity of tissue will account for the chronic disease of the prostate gland, which was one of the most remarkable phenomena observed in these dissections.

The point of pathological anatomy in relation to which the author is least definite, is the alteration of the kidneys and bladder. The researches of Dr. Bright have thrown a new light upon those affections; and as the urine was remarkably pellucid as well as variable in quantity, in many cases of seminal discharges, we regret that Dr. Lallemand had not been able to repeat his observations after the inquiries of Dr. Bright had become better known. They might have led him to some interesting conclusions, and perhaps, in some degree, have modified his results. Still, we believe, that he is perfectly justified in regarding the affection of the urethra as the starting point of the lesions of the urinary organs, and that the inflammation was communicated by direct extension along the mucous tissue.

The urethra, and the other parts of the genito-urinary system, all concur in the production of the symptoms; and without care the relative importance of the various functional disorders might be misunderstood; it is, therefore, important for the diagnosis, to remark that the emission of the semen occurs towards the close of urination. The patients often feel a spasmodic contraction in the

region of the vesicles, and discharge, with the last drops of urine, the glairy liquid characteristic of this affection. The author admits that this liquid does not possess all the qualities of healthy semen; but he believes (without giving the proofs) that the seminal animalcula are deficient, analogous to the deficiency of the urea in diabetes. But, as the liquid resembles semen in most of its sensible qualities, and as the pathological anatomy and the history of the symptoms evidently connect the affection with the lesions of the seminal organs, he cannot regard the fluid as any thing else than ill-elaborated semen. When the discharges of the seminal fluid are very frequent and abundant, there is a constant desire to pass the urine.

We have already stated, that gonorrhœa was the most frequent cause of this disease. The observations detailed in the work, prove this in the most conclusive manner, and show the great danger of neglecting these inflammations, which, in their chronic state, produce involuntary seminal discharges. The frequency of chronic disorder of the urethra and the genital organs is also increased by the rash and empirical use of copaiva; but other causes, however, concurred in producing the seminal discharges; the patients were chiefly individuals of a nervous, excitable temperament, and had previously been addicted to venereal excesses or to masturbation. Most of them had experienced repeated attacks of gonorrhœa, and the disease of the urethra rarely occurred after a single attack.

After gonorrhœa and masturbation, the most frequent source of these involuntary discharges of semen is the existence of chronic diseases of the skin, or rather of the deranged health which favours the developement of these eruptions. When these eruptions suddenly cease, a urethral discharge sometimes occurs, which may be readily mistaken for ordinary gonorrhœa. If the eruption again occur, either naturally or after the use of flannel or other irritants upon the skin, these false gonorrhœas will generally cease. If they are protracted, or if they return at short intervals, the seminal vesicles and ejaculatory canals soon become affected, and the ordinary symptoms of the affection are developed. The close connexion between the skin and the mucous coat of the urethra, may, in some measure, account for these symptoms.

It is singular that affections of the rectum which oppose mechanical obstacles to the passage of the fæces, and thereby give rise to prolonged and obstinate constipation, should in the end produce a weakness of the seminal vesicles. At each act of defecation, the pressure of the hardened contents of the rectum forces a half elaborated semen from the vesicles, and the patient feels his health and mental energies sink under the influence of some inexplicable connexion of the rectum with the brain. Even a fissure at the anus, or neglected and painful hemorrhoidal tumours, occasionally give rise to similar symptoms, merely from the obstacle to the passage of the fæces and the consequent straining and severe pressure upon the urethra.

In a few cases, ascarides in the rectum occasioned so much irritation as to react upon the urethra and seminal vesicles and give rise to profuse involuntary emissions. A most remarkable case is related by Mr. Lallemand of obstinate discharges, chiefly, however, during sleep, which resisted all methods of treatment until the ascarides were removed by large and repeated enemata of very cold water.

The most agreeable part of the work is, that the treatment proved very successful. The author does not state what is the proportion of cases which he has cured or greatly relieved; but he has given such complete histories of a large number, that we are quite sure that his treatment was both judicious and efficacious. It is founded on very simple and plain reasoning. If the emissions depend upon a disease of the rectum, upon obstinate constipation, worms, or any other obvious cause, the removal of these sources of irritation will rapidly cure the patient. But if the disease is the result of severe or prolonged gonor-

rhœal discharges, the chronic inflammation of the prostatic portion of the urethra, and of the neck of the bladder, can only be removed by cauterization. The author passes the nitrate of silver into the urethra, enclosed in a suitable instrument, and turns it very rapidly over the portion to be cauterized. It should remain in contact with the urethra the shortest time possible, and then be instantly withdrawn. After the application of the caustic, the discharge of urine becomes excessively painful for a day or two, and is sometimes a little tinged with blood. But after the pain has abated, the discharge of semen is suspended, the patient experiences a sensation of strength in the parts to which he had long been a stranger, and in a short time the urine becomes clear and quite free from any admixture of glairy fluid, while the general symptoms are rapidly ameliorated.

The successful results of M. Lallemand encourage us greatly, and henceforward, when the symptoms which have been mentioned exist, no practitioner should forget to inquire if a glairy, viscid fluid, is discharged while passing the last drops of urine, or when straining during evacuation of the bowels. By treating such patients judiciously, a class of cases are curable, which, under ordinary circumstances, are quite intractable.

W. W. G.

ART. XV. *Medico-Chirurgical Transactions, published by the Royal Medical and Chirurgical Society of London, for 1836. Volume the twentieth.* London, 1837. 8vo. pp. 384.

The contents of the present volume of *Medico-Chirurgical Transactions* are, generally speaking, of so interesting a nature, that our readers, we are persuaded, will not be displeased should we present them with a more full analysis of it than is usual in bibliographical notices.

The first article is by Dr. J. Yelloly of London, being *Observations on Vascular Appearances of Mucous and Serous Membranes, as indicative of Inflammation*. In a former communication, inserted in the fourth volume of these *Transactions*, Dr. Y. endeavoured to show by a series of observations that

“Appearances of vascular fulness in the villous coat of the stomach, whether florid or dark coloured, in distinct vessels, or in extravasations of different sizes, are not to be regarded as unequivocal marks of disease, inasmuch as they occur in every variety of degree and character, under every circumstance of previous indisposition, and in situations where the most healthy aspect of the organ is to be expected.”

“That such vascularity is entirely venous, though sometimes florid, and sometimes of a dark red; that it depends on a power capable of being exercised on the artery itself at the close of life, which carries on the blood to the veins, after the further supply of fresh blood from the heart is stopped, and that the branched or stellated form of vessels, under which the vascularity usually appears, is capable of being imitated, whether by injection of the veins with fine injection, or by forcing back with the finger, or the back of a scalpel, the blood from the larger branches of veins into the smaller.

“The vascularity soon becomes diffused redness, by transudation through the coats of the containing vessels, just as happens with the bile in the gall bladder, or in the speedy production of a blue colour, when mesenteric arteries are injected with a solution of prussiate of potash, and the veins with that of green sulphate of iron.”

“That it is very difficult to ascertain, merely from the aspect of the vessels of a dead part, that they had been affected with inflammation during life, unless for the occurrence of unequivocal results of inflammatory action.”

The object of the present communication of Dr. Yelloly is to illustrate and enforce the correctness of the foregoing propositions, in reference as well to the serous as to the mucous tissue. The illustrations are drawn chiefly from the

writings of the continental physicians, more especially, however, from the *Précis D'Anatomie Pathologique* of M. Andral.

That mere vascular fulness or increased redness of a tissue, after death, is no conclusive indication of its having been the seat of inflammation, is now generally acknowledged; but that such an appearance is to be viewed in almost every instance as a cadaveric phenomenon, we are very far from being prepared to admit.

2. *History of a remarkable case of Varicose Aneurism, with Observations.* By J. G. PERRY, Surgeon, &c.—This is not only a very remarkable, but a highly interesting case, showing that a true varicose aneurism may be produced by other causes than a wound penetrating through the vein into the subjacent artery. That such should be the case is certainly contrary to what has been inferred from the circumstances of all the cases heretofore recorded; while “the great indisposition manifested by blood-vessels, and especially veins, to partake of the ulcerative process, even when it may have involved all the surrounding tissues, rendered it very improbable that an opening would take place in the coats of one of the last mentioned vessels from any of the ordinary causes of absorption. Aneurisms of large arteries have often been seen to cause, by their pressure, absorption of all the solid structures around, without their accompanying veins becoming, in any degree, involved in the general havoc.” The present case will, however, suffice to prove that such laws, though of *general*, are not of *universal* application. The patient, a man 47 years of age, was never a very strong man, and was discharged from the army, in 1819, on account of general ill health.

“He had no recollection of any accident having occurred to him except one, a few years before he left the army, when he and his horse were knocked down by the fall of a heavy piece of timber. His left knee was much hurt at the time, and had never since been as strong as the other, and sometimes had been so painful as to lead him to apply for surgical assistance.

“In the year 1831, being at that time employed in drawing a truck, he suffered for several months from pain in the foot, at its inner side, and matter formed, and was discharged from that part. Sometime in the course of the same year he first perceived a small swelling a little below his left knee, but it gave him no pain and he disregarded it. The swelling increased very slowly in size and troubled him very little, that he could recollect, for two or three years, except that occasionally, when drawing his truck, he was seized with pain in it to such a degree as to be obliged to stop for a few minutes from his work.

“About two years after the first discovery of the tumour, his wife accidentally perceived a *palpitation* (to use his own phrase) in the middle of the left thigh, which alarmed her very much, as she connected it in her mind with a palpitation he was then subject to about his heart, and which was sometimes so violent as to prevent him from doing any work. The patient himself, however, suffering no inconvenience from the condition of the thigh, paid no attention to it. The *palpitation* in the thigh went on increasing, as did also the swelling in the leg, nothing being done for their relief until February 6th, 1834, when he applied for admission into the infirmary.”

On his admission an aneurismal tumour of considerable size was discovered at the upper part and inner side of the calf of the left leg, apparently occupying the lower end of the popliteal, or the commencement of the posterior tibial artery. The contents of the sac were so entirely fluid, that it could be almost emptied by pressure with the hand. Pulsation could be felt distinctly in the anterior tibial artery as it passed over the tarsus, and obscurely in the posterior tibial, behind the internal malleolus. As the patient lay on his bed with the limb placed on its outer side, a very remarkable pulsation could be distinctly *seen* along the course of the femoral artery and vein, beginning about two inches below the crural arch, and terminating at the spot where the femoral vessels become included in the tendinous sheath formed by the triceps muscle. When the hand was laid upon any part of this region a very peculiar thrilling

was perceived, occupying a space of at least two inches on either side of the vessels, but varying in intensity and force according to the distance of the part examined from them. This thrilling was quite distinguishable from the pulsation of the artery.

In consultation it was decided that the diseased state of the vessel rendered it inexpedient to place a ligature upon it, until the increase of the tumour in the ham should have brought the patient's life into immediate danger.

"Neither did the ligature of the external iliac artery promise a more successful event, since its pulsation could be felt and heard over so wide a space, that it also was conceived to be greatly dilated, if not decidedly aneurismal."

The relater of the case having accidentally discovered that by pressing the point of his finger upon a part of the artery immediately before it entered the sheath of the triceps, he could entirely stop the thrilling, without interrupting the circulation of the vessel, suspected the existence of a communication at this part between the artery and vein. The patient, however, constantly denied that he had ever received a wound in that situation, and no scar was visible on the skin. The treatment of the patient during his continuance in the infirmary, was confined to means adapted to diminish the force of the circulation, while rest in the recumbent posture was most strictly enjoined. Pressure, by means of a bandage extending from the foot nearly to the groin, was for some time persevered in, but was eventually abandoned on account of the uneasiness it occasioned.

"For this was substituted the more circumscribed pressure of a spring, resembling a truss, having at its extremity a small pad, intended to imitate, as nearly as possible, the pressure of the point of the finger, which was so effectual in restraining the thrill."

In this manner it was hoped that the presumed communication between the vessels would be obliterated, and such a condition of the parts produced as would justify the ligature of the femoral artery, for the cure of the aneurism in the ham, whilst it was thought possible that the retardation of the circulation through the artery might even afford occasion for the natural cure taking place in the sac.

After a residence of nine months in the infirmary, no change was observable in the condition of the diseased parts, and the patient at his urgent request was discharged, November 24, 1834. He was regularly visited until September, 1835, by the assistant surgeons of the institution, and occasionally by Mr. Perry, who was able to perceive no change in the size or other characters of the popliteal tumour; but the thrilling in the thigh became obviously diminished in force and extent, and could no longer be seen as before. The superficial veins of the leg became remarkably enlarged.

"These changes were sufficiently explained on dissection by the obliteration which was found to have been brought about in the vein, probably by the long continued pressure, and which, by diminishing the bulk of the circulating contents of the vessel, rendered that remarkable *bruissement* less obvious than before. The obliteration of the femoral vein also accounted for the enlargement of the superficial veins."

On the evening of the 9th of September, the patient applied to be readmitted into the infirmary, on account of the great and sudden enlargement of the tumour in the ham, which had taken place a few days before, preceded by much pain and throbbing. The tumour was nearly four times its former size, but still retained its original form; the skin which covered it was extremely tense, and presented, at its most prominent part, a livid discoloration, which seemed to threaten almost immediate sloughing. Great pain was felt in the tumour and down the leg, while the superficial veins were very much enlarged and distended with blood.

The certainty that the patient would perish from hemorrhage should the aneurism be allowed to slough, induced Mr. P. to give to him the slender

chance presented by the ligature of the artery. The operation was accordingly performed on the following day in the usual situation.

"Upon dividing the integuments and sheath of the vessels, the artery was found to be enlarged nearly to the size of the abdominal aorta, and its coats so remarkably thin, that it presented more of the appearance of a vein than of an artery. Much difficulty being experienced in carrying the point of the needle round the artery, apparently from adhesion at its back part, and its extreme tenuity rendering it very hazardous to employ any degree of force, it was deemed advisable to enlarge the opening in the sheath, and pass the ligature about half an inch higher up, which was effected without any difficulty. So attenuated and fragile were the coats of the vessel, that they actually gave way under the slight pressure made by the fingers of a gentleman, who held it with a view of assisting in the passage of the needle under it, and blood issued in a minute jet from its anterior surface. This accident made it necessary to observe the greatest caution in tightening the ligature, as it seemed not improbable that if drawn with ordinary force, it would completely divide the artery. The noose was, therefore, only drawn to a sufficient degree to stop the pulsation in the sac and lower portion of the artery, and as the bleeding from the small laceration before described immediately ceased, it was deemed that enough had been accomplished to stop the circulation through the vessel, and the wound having been closed by straps of adhesive plaster, the patient was carried back to bed."

It is unnecessary to detail the symptoms of the case between the operation and the night of the 15th of September, when a hemorrhage suddenly took place from the wound to a very large amount, inducing a state of syncope, from which the patient was with difficulty revived. The bleeding was on this occasion restrained by pressure on the wound, but recurred on the following day, when the patient sank exhausted, on the sixth day after the operation.

"*Dissection.*—The lungs were adherent in many parts to the costal pleura, and presented several old cavities which were cicatrized. The pericardium was universally adherent to the surface of the heart. The right auricle was large; right ventricle proportionably small; the left ventricle dilated and hypertrophied. The tricuspid and mitral valves were healthy, as well as those of the pulmonary artery and aorta. In the coats of the aorta, at its commencement, at the arch, and near its bifurcation, was deposited much of the atheromatous matter usually found in large arteries of aneurismal subjects. A single pointed spiculum of bone presented itself among the atheromatous matter at the arch. The aorta was much dilated about the origin of the arteria innominata, which vessel was unusually large. The abdominal aorta was rather thin in its coats.

"The external iliac arteries, especially the left, were extremely tortuous, being reflected upon themselves in a singular manner, during their course towards the crural arch; a condition which had, no doubt, given rise to the impression of the artery being extremely dilated, since it conveyed to the hand simultaneously the combined pulsations of the folded portions. The coats of the femoral artery, throughout its whole course, were scarcely, if at all, thicker than those of a vein, the attenuation having, as a careful dissection afterwards proved, taken place equally in all its coats. Immediately below the origin of the profunda the vessel was greatly dilated, having the appearance of an aneurismal sac. Its coats were here softened and much attenuated, and presented an aperture anteriorly, large enough to admit the point of the ring finger, from which the fatal hemorrhage had taken place. The ligature had been placed at a very short distance below this part of the vessel. The wound was full of coagulum, which had also made its way into the sartorius and surrounding muscles, and by its pressure had probably restrained the hemorrhage so as to prevent the patient from bleeding to death at its first access.

"At the spot in the thigh where the communication had been presumed to exist between the artery and vein, there was an aneurismal sac, about as large as half a walnut, firmly ossified within, which, by the pressure it had exerted upon the vein, had caused absorption of its coats, so as to form a circular opening of about two lines in diameter, into which the aneurism had burst; thus inducing a free and persistent communication between the vessels. Just below the aperture, the

vein was obliterated at a single *point*, below which it was again pervious. In all the rest of its course up the thigh it was diminished in size and thickened."

The obliteration of the vein was no doubt caused by the use of the spring, which effectually compressed the vessel under the bony walls of the aneurism.

"At the lower part of the popliteal artery, exactly at the point of division into the anterior and posterior tibial trunks, the vessel was dilated into a very large aneurismal sac, which contained a small quantity of laminated fibrine; but the greater part of its contents consisted of loose coagula and serum. The tibia formed part of the walls of the sac, and was partly absorbed, so as to present a scabrous surface. The posterior tibial artery opened *from* the sac, as the popliteal had opened *into* it, by a circular and even orifice. The anterior tibial could not be examined, as it was sacrificed in separating the tumour from the tibia."

3. *Case of Recovery from the Insensibility of Intoxication, by the performance of Tracheotomy.* By G. SAMPSON, Esq., Surgeon, Salisbury.—A man, 31 years of age, was brought to the surgeon in a state of complete insensibility from intoxication, the pupils being largely dilated, the breathing stertorous, and all voluntary motion having been lost for at least four hours. The stomach pump was used, and from three to four pints of fluid drawn off, appearing to consist chiefly of brandy; after which tepid water with ipecacuanha diffused in it was several times injected into the stomach, and after awhile withdrawn. These means failing to excite vomiting, a strong solution of salt in water, afterwards of the sulphate of zinc, were repeatedly tried, with no better result. The apoplectic symptoms seemed rather to increase; the pulse grew fainter, and at last was scarcely perceptible; the whole surface of the body was cold and clammy, and the patient was insensible to every kind of stimulus. It occurred to Mr. S. that the comatose state in which the patient lay might not arise from apoplexy, but from torpor of the brain, in consequence of that organ being supplied with blood not duly oxygenated; for "the shrill tone and extreme difficulty of respiration showed the existence of collapse of the glottis, and imperfect transmission of air into the lungs, which might be accounted for by a paralyzed state of the eighth pair of nerves and recurrent branches." Under the belief, therefore, that if a mechanical respiration were carried on for a time, the blood might regain its stimulant properties and restore the energies of the brain and nervous system, the operation of tracheotomy was performed.

"The trachea was no sooner opened than the distension of the veins about the head and neck subsided, the violent efforts of the extra-respiratory muscles ceased, and in about half an hour regular and easy respiration through the wound was completely established; at the same time the pupils became slightly sensible to the stimulus of light, and the pulse returned to the wrist."

Directions were given for the frequent removal of the mucus which appeared at the wound. A piece of strong spring wire, with a bow at each end of it, was introduced into the orifice in a bent state; and being allowed to expand, the opening into the trachea was kept open and prevented from being covered by the muscles, even during the efforts of deglutition.

The patient passed a quiet night, and in the morning indicated by signs that he suffered from headache and soreness at the pit of the stomach; there was a tendency to sickness, and the tongue was coated with a peculiar whiteness, as if rubbed over with chalk. Moderate purgatives, followed by mild alkaline medicines, soon removed these symptoms, and a few leeches were applied to the throat to check too high a degree of inflammation; no further treatment was required. In about three weeks, the wound being healed, he was discharged cured, and has continued until now, a period of eight months, in perfect health.

4. *On the Treatment of Injuries received in Dissection.* By R. A. STAFFORD, Esq., Surgeon, &c.—Of this interesting and valuable paper we shall be able to give only a very brief notice, passing over entirely the histories of the several cases which it comprises. Mr. Stafford conceives that the phenomena resulting

from injuries received in dissection can only be satisfactorily accounted for on the supposition of the introduction of an animal poison.

"For," he remarks, "we find the most alarming and rapidly fatal cases to occur where there has been but a slight abrasion or scratch, as well as where a deeper wound has been inflicted by the point of the scissors, the hook, or the scalpel, so as to render questionable the probability of wounding the sheath of a tendon. Further, many cases are recorded in which no abrasion, scratch, incision, or puncture was noticed, or any evidence of such injury found on the most minute inspection of the part; consequently some deleterious poison must have been absorbed by the skin."

Mr. S. produces some remarkable instances of this mode of receiving the injury.

"In dissection wounds the constitutional symptoms and the local affection vary considerably, both in intensity and extent. In some individuals the wound itself only inflames; in some the absorbents also become inflamed; and in others an abscess may form in the axilla without further mischief. These are the simple cases; but there are others of a more formidable character—cases where, in a few hours, without the local injury being of any extent or severity, indeed hardly perceptible, the constitutional symptoms are of so appalling a nature, that the vital powers are at once overwhelmed, and almost immediate death is threatened. In other cases, again, diffuse cellular inflammation occurs in the hand, the arm, the axilla, the side, or some other part of the body, giving rise to vast collections of pus and sloughing of the cellular tegument, and thus overpowering the constitution. Absorption of animal matter may also be attended by the appearance of vesicles containing fluid in various parts of the body.—It may also produce mortification of the injured parts—irritative fever, eruptions, diarrhœa, and general ill health."

With regard to the treatment of these injuries, Mr. Stafford remarks:—

"When signs of absorption have taken place, which will be known by the pain and inflammation of the wound, and whether the absorbents are inflamed or not, it would be advisable to rub the *argentum nitratum* on the cuticle, across the course of the absorbents, about two inches in breadth, and sufficient to blacken the surface. If the absorbents are not inflamed, its application should take place on the forearm, as near as possible to the hand; but if they are already inflamed, it should be employed immediately above the point to which the inflammation has extended. The next step will be, to evacuate freely the contents of the bowels. The part around the wound will now probably begin to swell. It must be immediately reduced by leeches, and their application must be repeated at each accession of inflammation, or non-reduction of it. Soothing fomentations also must be employed, and poultices, &c. to the wound. Attention to the constitutional symptoms will now be of the utmost importance. If there be, according to the severity of the case, extreme pain in the wound, violent pain in the head, the back, in the lumbar region, rigor, tremor, tetanic convulsions, and extreme nervous depression,—these symptoms should be immediately combated as soon as they arise; and from the results of the treatment adopted in Drs. Simms' and Moss' cases, under such circumstances, the muriate of morphia appears to allay them more than any other remedy. In these cases, the effect of this medicine was remarkable. Although Dr. S. was suffering the most excruciating agony in the back and finger, with all the symptoms above mentioned, yet the remedy had an immediate effect in producing composure, and keeping down the violence. It appears advisable, therefore, to administer it in such doses, and with such frequency as to keep the patient under the influence of its action.

"After the first shock the system has received from the introduction of the poison, fever will supervene. This symptom will be, perhaps, best treated by sudorifics, and the usual means employed under such circumstances. A question may now arise, whether general bleeding should be employed or not? There may be individual cases, where the patient is of so plethoric a habit, or so inflammatory a tendency, that the abstraction of blood may be required; but, generally speaking, it appears to me that it would be better to avoid it. In the first place, the nervous system has already been depressed by the introduction of the

poison; in the second, the fever which is present cannot be considered simply of an inflammatory nature, but rather of an irritative kind; and in the third, although the present symptoms may be violent, yet perhaps from the formation of abscesses, and the general reduction of the patient, he will afterwards require as much of the restorative power as possible to recover his strength."

In many of Dr. Duncan's cases, in which the patients were bled, they never appeared to rally after the bleeding.

"Although it appears to me that general blood-letting is not advisable in most cases of injuries from absorption, (excepting under peculiar circumstances,) yet on the other hand I consider topical bleeding of the greatest consequence; indeed so important does it appear, that I feel persuaded that without its employment, when the inflammation of the hand and absorbents is very great, the patient has but little chance of recovery. Blood, therefore, should be abstracted by the repetition of leeches on the inflamed part, on any swelling arising from the wounds, along the course of the inflamed absorbents, and on the glands of the axilla, or any other part where their employment may be required."

In four of the cases recorded in the paper before us topical bleeding was employed, and in no one of them was there formation of pus in the axilla or the side.

"It not unfrequently happens, that in defiance of all our endeavours to prevent it, pus will be formed in the axilla, the side, or some other part. It now becomes a question of great importance in what manner a swelling, where such formation is suspected, ought to be treated? At first it will perhaps be extremely difficult to ascertain whether matter is formed or not, and at the same time the patient may be suffering from the tension of the part the most distressing symptoms. There may be great pain, depression, fluttering pulse, delirium, exhaustion, and general distress. Under these circumstances, whether pus is formed or not, the swelling ought to be opened; and as the chief object, if matter be not formed, is to relieve the tension of the part, the incision should be of considerable length."

In the case of Mr. Pierce the most alarming symptoms occurred, and even death was threatened from the distress the tension occasioned; as soon, however, as an incision was made into it, relief was obtained. Other cases are recorded by the writer of this paper, as well as by Drs. Duncan and Colles, and Mr. Travers, in which the importance of free incision into the swellings resulting from dissection wounds was very apparent. Life may no doubt in many cases be preserved by it.

"It is a remarkable fact, that in most of the cases related by Drs. Duncan, Colles and others, where a swelling or abscess took place without an opening having been made into it, the patients did not recover.—On the contrary, in those cases where openings were made, the patients lived.—The following inference, therefore, may fairly be drawn:—that free incisions made into swellings arising from the absorption of animal poison are attended by the most beneficial results, and that, from the facts now brought forward, they ought to be made in the earliest stage of their formation.

"The third stage of the treatment, when abscesses are discharging profusely, and the patient is reduced by the violence of the disease, consists in giving power and support to the constitution. Bark, wine, meat, porter, and nourishing diet of every description that the stomach can bear, and such as circumstances require, may be allowed. The abscesses and other symptoms may be treated according to the common principles of surgery. During the progress of the disease symptoms may arise, such as inflammation of the lungs, &c., which I have not mentioned. These can only be judged of by the attendant at the time, and should be treated accordingly."

5. *Account of a case of Fracture and Displacement of the Atlas.* By BENJAMIN PHILLIPS, Esq.—The patient slipped off a hay-rick and fell to the ground head foremost, the occiput coming in contact with the soil. The stunning effect or concussion resulting from the fall was soon sufficiently dissipated to allow of his walking half a mile to the residence of the parish surgeon, by whom he

was bled and purged. Next day scarcely any inconvenience was experienced from the accident, and in two days more he returned to his occupation.

"From the day succeeding the accident he felt what he termed, and what really was, "a stiff neck," for he was unable to rotate the head. This stiffness was all he complained of when Mr. P. first saw him, which was between three weeks and a month from the occurrence of the accident, and on that day he had walked above two miles."

He was a powerful, scrofulous-looking man, of thirty-two; had enjoyed usually good health. The only uneasiness he experienced, and that slight, was in the back of his neck. Immediately over the second cervical vertebra a small tumour was discovered, pressure upon which occasioned only a slight pain.

All the functions of the economy, with the exception of the inability to rotate the head, were well performed, and Mr. P. could discover no other lesion of motion or sensation. He presumed that a chronic inflammation of a scrofulous character was developed in the first or second cervical vertebra, or both, and that the articulating surfaces between them had been so modified as to threaten what is termed "false ankylosis."

In consonance with this diagnosis the patient was directed to lie upon a mattress without a pillow, and twelve leeches were applied to the affected part every third day. The leeches were applied six times, but the only effect they produced was the removal to a great extent of the tenderness. Ten days subsequently to the last application of leeches an issue was made in the neck over the tumour, which continued to discharge for two months, when it was dried up. The tenderness remained unchanged, but almost entirely disappeared after the issue had cicatrized; the tumour still retained its original character. Another issue was formed in the fifth week from the period when the cicatrization of the first was decided on. Soon after this Mr. P. noticed, what may have existed previously, a *thickness* of the voice, such as is produced by enlarged tonsils. On examination he found the tonsils to be greatly enlarged, but presented no indications of recent disease. A few days subsequently the patient complained of some inconvenience in swallowing. Upon a careful examination of the throat a slight projection or fulness was discovered at the back of the larynx, as near as may be at the level of the body of the second cervical vertebra. Mr. P. concluded that an enlargement of the body of the axis had been produced, which occasioned the difficulty in phonation and deglutition.

The second issue had been discharging for about five weeks, when he became the subject of a severe attack of pleuritis, for which he was copiously bled; by this attack he was a good deal debilitated, and during its progress the issue was healed. Soon after this, about nine months from the accident, symptoms of anasarca were manifested, and the infiltration shortly became general. From the anasarcaous affection he continued to suffer more or less, until the forty-seventh week from the injury, when effusion into the cavity of the thorax took place and the patient died.

"Up to the last week of his life he was accustomed to walk to the water-closet, which was on the same floor with his bed, and was never assisted in taking food, even though lying on his back; and no evidence was ever afforded to those around him that motion or sensation, with the exception already named, was in the slightest degree impaired, neither had the difficulty of swallowing materially increased."

Permission could be obtained only to examine the back of the neck.

"The condyles of the occiput still rested upon the articulating surfaces of the atlas, but the atlas was found to be, not a separate and independent vertebra, but an appendix to the axis. So much of its anterior portion, as includes the surfaces by which it is articulated with the occiput and with the axis, had been violently separated from the posterior portion of its ring, and had been carried in an oblique direction downwards and forwards, until it arrived upon the same plane, but an-

terior to the axis, to the body and transverse processes of which it became attached by perfect bony union, whilst the posterior fragment had suffered no displacement. Under these circumstances the bone presented two spinal foramina, and four transverse, but no odontoid process. This organ having been fractured and separated; no organ passed through the anterior spinal foramen."

A notice is presented of two cases of fracture of the atlas recorded by Sir A. Cooper. In two points of view the case before us is not wanting in importance;

"As an example, namely, of the extent of injury which may be experienced by this portion of the spinal column, without harm to the important organ whose natural protector it is, or even to the economy: and as a reason for rescinding the dicta that 'a fracture of the processus dentatus proves instantly fatal,' and 'that a fracture of the cervical vertebræ, above the third, with considerable displacement, is almost immediately fatal.'"

6. *Some particulars of a case in which the patient was saved from the destructive influence of opium, by artificial respiration.* By CHAS. I. SMITH, Esq., Assistant Surgeon in the Madras army.—The patient was a female, 25 years old. Four hours after she had become insensible from the effects of opium, her extremities were cold and livid; lips and face of a dark lead colour; the pulse fluttering and scarcely perceptible; the respiration three or four times in a minute, with sighing. The stomach was carefully washed out by means of the stomach pump, after which small quantities of ammonia combined with brandy were injected. The spasm of the œsophagus was so great, on attempting to introduce the tube of the stomach pump, as nearly to destroy it. The scalp was next entirely denuded of its hair, and several buckets of cold water were poured in rapid succession over it, the nostrils being at the same time stimulated with ammonia. The scalp was now rubbed with liq. ammonia, until the whole of it was vesicated. All these means produced, however, but little or no effect in rousing the patient from her state of stupor. The pulse had entirely disappeared at the wrist, and only a slight irregular action of the heart indicated that life was not quite extinct. It was now determined, as the only remaining chance, to try the effects of artificial respiration.

The mouth and one nostril being closed, a pair of common bellows was applied to the other nostril, and the chest was in that way inflated, and alternately emptied by pressure on the chest and sides. This was continued for an hour, without intermission, at which time the heart seemed to be rallying, but if left to itself it rapidly sunk again. An ounce of the ol. terebinth. was injected into the rectum; bottles of hot water were applied to the chest, and sinapisms to the feet and legs."

This treatment was continued for about two hours and a half, with only slight intermission. The patient at this time was so evidently rallying, that it was deemed safe to leave her. At the termination of another hour she was found relapsing into her former state. Artificial respiration was again resorted to, and continued for two hours. The pulse had then become regular, and the patient made slight attempts to move, and showed evidence of pain when pinched. She became eventually well, and has since been married.

"It was curious to see the effects of artificial respiration in this case. The livid colour of the face and extremities, rapidly giving way to a more florid hue on every inflation, and again as rapidly returning to its original colour on being left for a few minutes."

7. *Remarks on two forms of atrophy of the heart's valves, which interfere with their function: founded on a series of cases.* By P. N. KINGSTON, M. D.—The first of these lesions is "a simple shortening of the heart's mitral or tricuspid valve, without any diminution of its natural thinness, pliancy and transparency: the orifice to which it belongs possessing at least the ordinary calibre. In other words, it is an atrophy of the valve in the direction of its length." In one case, the length of the superior lamina of the mitral valve, which is naturally from seven to nine lines, was reduced to three; in another it no where exceeded a

line and a half, and was for the most part only a line. The laminae of the tricuspid valve are naturally from eight to eleven lines in length; but in one case they all three fell very far short of this, and one was only three lines. The valves in question are also generally thinner than natural.

The other lesion nearly allied in its nature and effects to the foregoing, consists in the continuity of the valve being interrupted by apertures, sometimes of large size, and sometimes so numerous as to reduce the structure to a mere net-work, while the remainder is in a state of attenuation, which is here and there often extreme, especially toward the edges of the apertures. Sometimes a large gap is seen, subdivided only by a few thready fibres. These, in the case of the auriculo-ventricular valves, are generally prolongations from chordæ tendinæ.

“It now and then happens that valves which have become thickened and indurated in various ways, are shortened or cribriform.”

Dr. Kingston considers that these lesions are far from being rare lesions in comparison with the others to which the heart's valves are subject. The reason they have been so much overlooked is from their being above all others likely to elude observation, until the attention has been once directed to them. If the valves are lying down against the side of the ventricle or artery without any deviation from the natural appearance except a diminished extent of surface, this defect may easily escape notice. It is indeed often necessary, before it can be accurately ascertained, to cut the chordæ tendinæ and lift up the valve under examination.

Both the lesions described prevent the valve from closing completely the orifice to which it belongs; and hence it permits that regurgitation which it was placed to prevent. The effect must be obviously to weaken the force with which the blood is propelled through the arterial system, and to favour its accumulation posteriorly to the affected valve. This will be in a great measure proportioned to the extent of the valvular deficiency and to the size of the corresponding orifice. When dependent on shortening it will also be liable to increase from bodily exertion, mental emotions, and other causes by which the heart's action is stimulated.

“From this disablement of the valve will hence arise a strong tendency to dilatation or hypertrophy of those parts of the heart posterior to the valve affected; palpitation, venous congestions, anasarca, and effusion into the serous cavities; and where the mitral or aortic valves are defective, to dyspnœa and cough, to pulmonary congestion and inflammation, and to some of those symptoms which are apt to arise from deficient and irregular supply of arterial blood to the head and remote parts of the body. At the same time it may be presumed that the degree of tendency to the production of these affections, is less than that of those diseases of the valves, which not only permit regurgitation, but likewise by narrowing the orifice, obstruct the passage of the blood in the natural direction.

“These two species of atrophy sometimes co-exist or are combined with other defects of the valve or its orifice: and then, though each be slight, their united influence may be considerable.”

In all the cases adduced by Dr. K. in which the circumstances are fully detailed, there had been anasarca and palpitations; and in all but one, dilatation of some cavity posterior to the affected valve. In all in which the valves of the left side were defective, there had been dyspnœa and cough, pulmonary congestion and inflammations; the radial pulse and the precordial impulse were frequently irregular and unequal; and out of the only four of these cases in which the history is sufficiently known, one patient was very subject to attacks of faintness and debility, another to vertigo and epileptic fits, a third died in a fit of syncope, and the fourth, after total sleeplessness for a fortnight, sunk into a state of coma, which was fatal in a few hours. Where the defect lay in the mitral valve, the pulse at the wrist, compared with the beat at the heart,

was generally small and weak; and where in the tricuspid, there was distension, sometimes attended with pulsation of the external jugular veins; in those cases, at least, in which they were examined. In several, the symptoms could not have been fully accounted for, had these valvular lesions been overlooked.

"Further experience is required to show with precision, by what modifications of the heart's sounds these defects are characterized. But I am satisfied, says Dr. R., from the stethoscopic examinations which I made, and from many analogous instances of simple regurgitation, that a bellows sound is often produced during the reflux of the blood through the affected valve."

"The discrimination of these from the other lesions of the valves is a point of great nicety, on which Dr. K. is not yet fully prepared to speak."

It is possible these defects may now and then be congenital; but according to Dr. K. there are the strongest reasons for believing that in the greater majority of cases they occur subsequent to birth. In considering their causes, Dr. K. esteems the supposition of their being the result of ulceration, as highly improbable. In all the cases the valves presented appearances exactly opposite to those which attend ulceration: they were thinner, more pliant, and more transparent than natural, and the attenuation gradually increased towards the edges of the perforations. Appearances which are most characteristic of those species of absorption unattended with suppuration.

"Of these two species of absorption the apertures can of course be ascribed only to the progressive; and in two cases, at least, in which the valves were both shortened and cribriform, the shortening was most likely produced by the same process as the apertures, by a progressive absorption of a portion of the valve at its free edge.

"The remote causes of these lesions remain to be investigated. In nine out of the ten instances in which the mitral or tricuspid valve was shortened, there was hypertrophy of the corresponding ventricle, which is in general preceded, as well as attended, by an increased force of the heart's contraction. In several, there was likewise obstruction to the discharge of the blood from the hypertrophous ventricle. In most, the patients had followed laborious occupations; and two traced their complaints in a great measure to over-exertion.

"In these nine instances, therefore, the blood's impulse against the valve affected had been permanently increased, and the valve had hence been subjected to an unnatural degree of pressure, an agent very frequently observed to occasion the atrophy of almost every tissue and organ in the body."

To prove the latter proposition Dr. K. adduces numerous facts.

"There can, therefore, he concludes, be no doubt that in the cases at present under consideration, the undue force of the blood's impulse against the valves may have been powerfully instrumental in promoting their atrophy. It could not, however, have been singly sufficient; for in some cases it has not at all impeded their nutrition, and in others it has been followed by an opposite change to that now considered."

"The undue force of the blood's impulse, therefore, in order to atrophize the valve, must have been assisted by some other cause. In the nine cases at present under review, the only cause that can be supposed is a debility of the valve's nutritive powers, in consequence of which its nutrition was obstructed by a degree of pressure which, had these been vigorous, they would have been able to withstand."

"In five out of the nine cases, marks of chronic disease were exhibited either by the pericardium, by some of the other valves, or by the inner membrane of the heart or aorta. In these five the valvular atrophy was probably consecutive on disease, with which the valve had been affected at the same time."

As our desire is to present to our readers with merely a brief outline of the author's views, we pass over the arguments and illustrations by which these are enforced.

In regard to the causes of the cribriform atrophy, of which there were five

cases, in one of which the pulmonary and aortic valves were both affected; and in two the auriculo-ventricular valve was shortened as well as cribriform.

“One of these patients had been very subject to gout and to precordial palpitations; and two had had several attacks of acute articular rheumatism, attended with well marked symptoms of inflammation of the heart; and, after death, exhibited old adhesions of the pericardium, and disease of some of the valves similar to that which is known to be consequent on rheumatic affection of the valves.”

Dr. K. next attempts to show that gout and rheumatism are liable to so impair the nutritive powers of a part, in particular constitutions, as to render it liable to be absorbed, under the degree of pressure to which it is naturally subjected, and still more certainly when subjected to an augmented pressure.

In two of the three cases particularly referred to, the heart's muscular substance presented a singularly pale, friable, flabby condition, unequivocally proving extreme languor of nutrition; and in one of these, there was a deposition of fat by the side of the cribriform valve, strengthening the analogy between this atrophy and the atrophies of other organs depending on failure of nutrition. In the remaining two of the five cases, the cribriform atrophy was referable to the same causes as have been assigned for the shortening.

“From what has been said of their causes, we may expect to diminish the frequency and severity of these lesions by avoiding those circumstances which are known to encourage inordinate action of the heart, and by studying to prevent the metastasis of gout and rheumatism of the heart, and to improve its treatment when it occurs.”

“The diagnosis of these lesions, even so far as to know that there is *some* valvular defect obstructing the circulation, will be highly advantageous to the patient. If the lesion be undetected, the symptoms will be supposed to indicate some other disease, as hysteria or dyspepsia; and hence a wrong opinion will be pronounced in regard to the future progress and the termination of the case; and, what is more material, the appropriate remedies will be neglected, while others, calculated perhaps to injure the constitution and increase the real disease, will be exhibited.

“It is generally agreed that, in valvular disease, the more distressing and fatal symptoms with which it is often attended, do not occur until the supervention of hypertrophy and dilatation. By a judicious employment of remedies, and regulation of the patient's habits, these consequences may often be warded off for a long term of years. The means adapted to this end need not for the most part be specified, as they are identical with the palliative treatment of the other purely mechanical valvular lesions. But,” Dr. K. remarks, “while great muscular exertion is of all things the most injurious, a good deal of very gentle exercise, by determining the blood to the remote parts, and relieving the heart and great vessels of their distension, is in many cases highly beneficial.”—“It is not unlikely, that if the heart's action can be kept tranquil, and the quantity of the circulating fluid be reduced, the orifice and cavities to which the defective valve belongs, may gradually diminish in calibre, so as to become adapted to the altered size of the valve.”

8. *A Case of unusual Dislocation of the Thigh-bone, with observations.* By BENJ. TRAVERS, Jun.—In this case the thigh-bone was dislocated upwards. It occurred in a sailor 19 years of age, who fell into the hold of a ship, the left buttock striking upon a coil of chain cable, from a height of about twenty feet.

The limb, on raising him, was immovable, everted and considerably shortened; a complete retention of urine followed the accident, but the bladder recovered after the lapse of two days, though the secretion remained turbid for some time. He landed in England four months after the accident, when two attempts were made to reduce the limb without success. He states that he met with many severe falls on first attempting to move from his hammock, at the distance of eight weeks from the time of the injury. He used to slip up and tumble backwards, with the leg of the affected side under him. Eight months from the occurrence of the dislocation the appearances were as follows:

"The left buttock is flattened; the trochanter is felt rather below, and to the outer side of the anterior and superior spinous process of the ilium. The neck of the bone lies apparently between the two anterior spinous processes, so that, when the patient is erect, the limb appears slung or suspended from this point. The head of the bone cannot be felt; it is invested by an abundance of bony matter, which extends backwards and inwards over the brim of the pelvis and iliac vessels, occupying in front, nearly the whole space between the inferior spine of the ilium, and that of the pubis, respectively. There is complete eversion; slight mobility; and imperfect progression with the aid of a crutch."

From the space we have already occupied, we regret to find that we shall be unable to conclude our notice of the volume before us, in the present number. We shall, therefore, close here for the present; deferring until our next an account of the remaining papers, many of which are extremely valuable, and claim a somewhat extended analysis. D. F. C.

ART. XVI.—*Recherches sur l'Emphysème des Poumons.* Par M. Louis, Médecin de la Pitié, Member de l'Académie Royale de Médecine, &c. &c.

Researches upon Emphysema of the Lungs. By M. Louis, Physician of La Pitié, Member of the Royal Academy of Medicine, &c. &c.

The above essay forms part of the memoirs of the "Medical Society of Observation" of Paris, the first volume of which has just appeared. Previous to the time of Laennec, pulmonary emphysema was almost unknown, and even since that period but little has been done to improve its history as given to us by that author. The work now before us, however, contains much new and valuable matter, and gives to the subject great additional interest and importance. The author's conclusions are based upon an examination of the histories of ninety cases of the disease, the greater part of which were observed by himself in the hospital of La Pitié. For some of them he is indebted to our countryman, Dr. J. Jackson, jun., of Boston, who, when in Paris, devoted much of his time to the investigation of this subject. Dr. Louis has published only a few of these cases in detail, but has given us a strict analysis of the whole. He has advanced but little that was not directly deducible from the facts before him, and based upon numerical data. This method of analysing medical cases may be said to have originated with him, and through its means the general results of clinical observation have assumed a high degree of accuracy to which otherwise they never could have attained. This system, although strongly opposed by many, is gradually gaining ground, as will appear by referring to several recent publications. It has been adopted by Andral in the last edition of his *Clinique*, as well as by Chomel. Even Bouillaud has given in his adhesion, and undertaken its defence in a late work, entitled "An Essay on Medical Philosophy, &c." We only regret that his feelings did not allow him to give to Dr. Louis the credit of being the first to carry out this system in practice, and urge its claims upon the attention of medical men.

Our author first gives a general description of the disease and of the appearances after death. He then proceeds to a separate consideration of each symptom and lesion, establishes the diagnosis, and concludes with some observations upon the causes, the frequency and the treatment of the disease.

We shall first consider his account of its

Anatomical characters. These are derived from the examination of the bodies of forty-two patients who died, more than half of whom were victims of the cholera. That portion of the lungs which was the seat of the disease, i. e. of the dilatation of the vesicles, was found to yield less easily to pressure than in the

natural condition; and its tissue also was thickened. This circumstance had been already noted by Laennec, but it further appears from the observations of our author, that this thickening is owing to a hypertrophy of the walls of the vesicles. That this is the case may be shown by direct experiment. It is also in accordance with a general law of our economy, that all membranous tissues become thicker in proportion as they are dilated from any cause. Dr. L. thinks that the dyspnœa which forms such a prominent symptom in the disease before us, can hardly be accounted for in any other way than by regarding it as the result of the influence which the hypertrophy of the vesicles must necessarily exert upon the reciprocal action between the air and blood in the lungs. It is possible that the dyspnœa may be in part owing to this cause, but it seems to us that it can be accounted for at least equally as well in another way. An emphysematous lung contains more air than a healthy one, and remains permanently distended, so that during each inspiration a less amount of air is taken in than natural. As the quantity of fresh air introduced into the lungs during each inspiration is diminished, it is clear that the conversion of venous into arterial blood, must be retarded; and hence dyspnœa must be the necessary consequence. The extent of the emphysema was very various. Sometimes it affected the whole of both lungs, and at others a part only of one. The extent to which it existed, appeared to be in proportion to the duration of the disease. Both sides of the chest were found to be equally liable to it. The degree of dilatation of the vesicles was always very various in the different parts of the lung. Generally, it was greatest upon the internal surface, or at the base, and especially along their free border. This fact is regarded by M. Louis as particularly worthy of note, because it seems to show that this affection is independent of pulmonary catarrh, or at least that form of it which attacks the smaller ramifications of the bronchial tubes, and gives rise to a subcrepitant râle. Adhesions between the opposing surfaces of the pleura were found in thirty out of thirty-six cases, but they were never universal, and generally occupied either one side only, or a small part of the lungs. This condition of the parts does not differ a great deal from what is usually found in the examination of bodies not tuberculous, and Dr. L. regards it as being in nowise the result of the emphysema, since the individuals in question were generally well advanced in life, and the adhesions were found as usual at the posterior part of the lungs, whilst the anterior portion was most subject to emphysema. Besides, no adhesion whatever existed in two out of the three cases in which the emphysema had arrived at its greatest height. The bronchial tubes were not more frequently dilated in this than in other diseases. From all this, Dr. L. thinks that it is evident that inflammation of the surrounding parts does not operate as a cause of dilatation of the vesicles, and also that the latter has no influence in producing the former. In sixteen out of the forty-two cases, the heart was augmented in volume. This augmentation is considered as a consequence of the emphysema.

Symptoms.—The first in order and the most important is dyspnœa. Of the patients who left the Hospital more or less relieved, forty-four were carefully examined with reference to this symptom, which was absent in only two cases. It was permanent, and never completely disappeared after the period of its first developement, except in a solitary instance. In some it showed itself during childhood, as was evinced by their inability to run as fast as their companions of the same age, without being quickly put out of breath. In the greater part it commenced much later in life, but in three cases only after the age of fifty years. Hence Dr. L. concludes that the liability to the disease is very slight in persons who are over fifty. Whether this be so or not, we cannot undertake to determine; but at the same time are inclined to think that the facts brought forward by our author are insufficient to prove it, because it must be recollected that the number of aged persons admitted into his Hospital are, comparatively speaking, few in number. The oppression, when first observed, was commonly

slight, and remained so for a long time in those cases where it showed itself at an early period; and in few did it become violent till after the lapse of a considerable length of time. In most it was subject to violent exacerbations, which sometimes occurred without any appreciable cause, but were generally the consequence of an attack of acute pulmonary catarrh. The importance attached to this symptom will be best enforced by quoting our author's own words.

"This dyspnœa, so remarkable on account of the period of its commencement, which was frequently during childhood, of its duration, its permanency, its frequent exacerbations, often unaccompanied with any of the other symptoms of disease of the heart; this dyspnœa, I repeat, was of itself characteristic of emphysema. It was impossible, in fact, to refer it to a simple habitual pulmonary catarrh, which was not present in all the cases where the oppression appeared after the age of twenty years or a little before; and which, moreover, with one exception, did not exist in any of those where the commencement of this symptom was referred to very early life. It could not be owing to a general or partial dilatation of the bronchial tubes; because, when the latter is accompanied with dyspnœa, this is mild, and especially not subject to exacerbations. In some cases, which were complicated with disease of the heart, this last was only of a few years duration when the patients came under our observation, and was very far from having originated during childhood. Finally, the absence of hæmoptysis, and of the other symptoms of tuberculous disease, would not allow us to attribute the symptom in question to phthisis; so that the mere existence of dyspnœa, possessing the characters which have been described, might of itself be sufficient to discover, and has in fact often been the means of discovering, emphysema of the lungs."—pp. 185–186.

In those who died, the characters of the dyspnœa were found to be very much the same as in the foregoing series of cases.

Form of the chest.—This was uniformly altered. There was an unnatural prominence, which occupied a surface of limited extent, and was generally confined to one side. In one case only was the chest distended throughout, and here it presented more or less of a globular form. The prominence alluded to usually commenced under one or other clavicle, and extended downwards about as far as the nipple. At the same time the usual hollow above the clavicle was more or less obliterated on the same side, and sometimes even its place was supplied by an absolute prominence.

This double prominence, which is found only in emphysema, has enabled me to recognise this affection in more than one instance, when a further examination has confirmed the diagnosis."—Memoirs, p. 198.

The description of the conformation of the chest is much more accurate than that given by any preceding writer. Laennec speaks merely of a general enlargement either of the whole chest or of one side.

The respiratory murmur was found to be more feeble than natural. This feebleness, although not confined to that part of the chest which was prominent, was, however, most marked there. The same was observed of the resonance on percussion, which was greater than natural. Besides the sibilant and sonorous râle, one or other of which existed in every case, there was found in many a subcrepitant râle at the inferior part of the chest behind. This râle was indicative of acute pulmonary catarrh, with which most of the patients were attacked shortly previous to their admission into the wards. The uniform seat of this râle, when existing as a sign of acute catarrh, is, as has been just mentioned, the posterior inferior portion of the chest.

"This law of its developement is moreover important, inasmuch as it seems to indicate that emphysema, which is generally found greatest near the free border of the lungs, is independent of pulmonary catarrh, at least in its acute form, and it increases the number, already considerable, of facts which show the wide difference which separates catarrh and tubercles."—p. 218.

That emphysema is not dependent upon the form of acute catarrh above alluded to is very probable, but at the same time we are not aware that any one ever supposed that it was so. On the contrary, it is to dry chronic catarrh that Laennec especially attributes its production.

Pain in the chest occurred in about half of those cases which were carefully examined with reference to this point. Its seat was almost always (13 times out of 15) in that part of the chest which was unnaturally prominent. Laennec does not speak of it.

"These (the pains) were not increased either by inspiration or coughing, and hence cannot be attributed to chronic inflammation of the pleura. Moreover their seat was generally the anterior part of the chest, which corresponds to that portion of the lung which is found most free from adhesions in emphysemas as well as under other circumstances, unless where the adhesions are general. It is equally impossible to refer the pains above spoken of to extension of the thoracic parietes, as this extension, when it is the result of mere effusion not consequent upon inflammation, is not accompanied by pain; and as this symptom existed thirteen times out of fifteen, not only on the same side with the prominence, but in the precise spot which it occupied, we are absolutely obliged by the process of exclusion to refer it to the dilatation of the vesicles themselves."—p. 225.

Nevertheless our author does not regard the conclusion as established, because he thinks that it requires a greater number of facts to determine the question positively.

Palpitation of the heart and œdema of the lower extremities were found in a considerable proportion of cases; but these symptoms did not commonly appear until after the disease had been long established. In most of those who died after having experienced permanent palpitation, the heart was found enlarged. Where œdema of the lower extremities had existed, the same condition of it was uniformly observed; and, on the contrary, where œdema did not exist, hypertrophy was never found. "Hence it necessarily follows, that œdema developing itself during the progress of emphysema of the lungs, should not be referred to this latter disease, but rather to an organic affection of the heart." It is evident, from what has been stated above, that permanent palpitation and œdema must not be regarded, strictly speaking, as symptoms of emphysema, but rather as indicative of that condition of the heart which so frequently complicates it. Moreover it is plain, that the hypertrophy was a consequence, and not a cause of the disorder of the respiratory function, because the dyspnoea existed long before the symptoms of cardiac disease made their appearance.

With one exception the patients lost neither flesh nor appetite, except for a short period during the existence of an attack of acute catarrh accompanied with a paroxysm of dyspnoea.

Having investigated each symptom separately, our author proceeds to consider the diagnosis which he establishes with that rigorous exactness which characterizes most of his observations, and especially those which refer to the distinguishing character of disease. He institutes a comparison between the symptoms of emphysema and those of other diseases with which it might be confounded, such as catarrh, dilatation of the bronchi, aneurism of the aorta, organic affections of the heart, &c.; and shows most clearly wherein it differs from each of them. We could not do justice to this portion of the paper unless we gave it entire, which would take up too much space. From what has been given above, however, the reader will readily discern the most prominent points of difference. The course of emphysema is essentially chronic, remaining stationary in many cases for a number of years, without giving rise to any very violent symptoms. In other cases, however, the disease was marked with considerable severity at its outset, but still its course was very protracted. In a few exceptional cases only, its progress would seem to have been very rapid. A remarkable instance of this kind is selected by our author, in which the dis-

ease arrived at a fatal termination one month after the date of the attack. Here, however, death was not caused by the emphysema alone, for at the same time there existed dilatation of the bronchial tubes and tuberculous depositions, the origin of both of which, however, appeared to be coeval with the dilatation of the vesicles.

Upon the causes of the affection but little additional light has been thrown. Laennec supposed, that in a great majority of cases, it was a consequence of chronic catarrh. This, however, Dr. L. does not admit. He says that,

“Setting aside those cases where the dyspnœa commenced in very early life, and in which cough did not generally supervene till a much later period, the oppression was far from being always preceded by pulmonary catarrh, as has been previously stated; and in several cases this latter did not show itself until one or more years after the occurrence of oppression. Hence we must admit the following conclusion, viz: that emphysema may and in fact does not unfrequently arise independent of pulmonary catarrh.”—p. 253.

Laennec himself states, that in some cases the dilatation of the cells appeared to be primitive, and the catarrh consecutive. But certainly it does not hence follow that emphysema may not owe its origin to chronic catarrh in a number of instances. Indeed some of the facts recorded by Dr. Louis seem to us to be in favour of this conclusion. Setting aside those cases in which the difficulty of breathing existed during childhood, this symptom was either preceded or accompanied at its commencement with cough in every case, except two. As regards those cases in which the dyspnœa is said to have occurred during childhood, it must be recollected that it was then exceedingly slight, being indicated merely by an inability on the part of the subjects of it to run as fast as their companions of the same age, at least, without being quickly put out of breath. Granting that slight dilatation of the pulmonary vesicles was then present, it seems to us that this could hardly be regarded as strictly anormal, and was, perhaps, in some cases only the result of their original conformation; for it was unaccompanied by any other symptom attendant upon emphysema in after life. But without insisting upon this, it is clear that pulmonary catarrh either preceded or accompanied the first signs of emphysema in the great majority of instances. It is worthy of note too that the only cases, (two in number,) in which dyspnœa was absent, were also free from habitual catarrh. Most commonly also the violent exacerbation of oppression which forms such a prominent feature of the complaint, coincided with an attack of acute pulmonary catarrh. That the symptoms of catarrh were not always permanent, or were not at all times present throughout the whole course of the disease, is no argument against the views we are supporting, for the cells being once dilated, difficulty of breathing, to a certain extent, would necessarily remain, although every sign of catarrh had entirely disappeared for the time. Indeed the circumstance above mentioned is in our favour, for it shows among other circumstances, as our author himself affirms, that cough is not a necessary symptom of emphysema, and hence it is the more astonishing that it should so very frequently accompany the commencement of the disease, unless we regard it as a cause and not a consequence. It is stated by Laennec that, in dry catarrh, the small bronchial tubes are often completely obstructed either by a pearly expectoration, or by swelling of their mucous membrane. He thinks that this state of parts gives rise to dilatation, by causing, during expiration, the retention of the air which had overcome the obstacles opposed to it during inspiration. Our author is of opinion that this explanation is not in accordance with the facts which he has observed, and that it is at variance with the following observation which he has made, viz: that the pulmonary vesicles were always found empty. This, however, does not in the least affect the question, for it is not the vesicles but the small bronchial tubes which are obstructed, according to the statement of Laennec. Of the condition of the latter, Dr. Louis, by a singular oversight,

has said nothing. We are far from regarding the views of Laennec upon this subject as clearly established; for, until the question shall have been farther investigated, it would be difficult, perhaps, to come to a positive conclusion. With all due deference to the authority of Louis, we must, however, observe that we do not think that the facts which he has adduced, establish the views which he has taken of this question.

The hereditary nature of emphysema seems to be clearly made out. Of twenty-eight patients affected with it, and from whom accurate information could be obtained in relation to the point in question, eighteen were born of parents one or other of whom had been subject to the disease. For the facts tending to establish this point, Dr. Louis is chiefly indebted to his late pupil J. Jackson, jr. There is only one source of doubt attaches to them, which is the difficulty of being perfectly sure that the parents of the patients referred to were really affected with emphysema. For they were regarded to have been so whenever it was found that they had been subject to great difficulty of breathing coming on by paroxysms, and accompanied by emaciation, &c. Now, although it is probable that the larger part of them were really affected with emphysema, we cannot, with the knowledge which we at present possess, admit that they all were so.

The disease, according to our author, is a very frequent one, and in proof of it he mentions, among other circumstances, that the cases which he has analyzed, in the memoir before us, were collected for the most part in the short space of twenty months.

Regarding the causes of the disease to be unknown, he says but little in relation to the prophylactic treatment, recommending merely the avoidance of the common causes of disease in general, and of that of the lungs in particular, and especially of those circumstances which are calculated to bring on paroxysms of oppression, and augment the symptoms of the disease when established. He alludes particularly to the inhalation of an atmosphere charged with dust, deleterious substances, moisture, &c. As regards the curative treatment, he has but little confidence in the efficacy of polygala, squills, &c. which were so much recommended by Laennec in relieving the pulmonary catarrh which accompanied the disease. He thinks that they do not diminish dyspnœa and favour expectoration, as has been said. Loss of blood he looks upon as equally inefficacious under the same circumstances. He has found but one substance which exerted a decided influence upon the dyspnœa, and that was opium.

"One medicine only, and that has been mentioned by Laennec, had a happy influence upon the dyspnœa of a large part of those patients affected with emphysema, whose histories I have collected; I mean opium in every form. Almost all those to whom I gave it experienced decided relief, (twenty-six out of thirty of those in whose history I had carefully noted down the phenomena which followed the administration of the medicine) and the violence of the symptoms returned as soon as the use of it was suspended, unless in cases where they had been reduced for a considerable length of time."—p. 259.

When the disease is complicated with hypertrophy and dilatation of the heart, the treatment requires some modification, but even here Dr. L. says that v. s. should be cautiously employed, as the dyspnœa is owing, in great measure, to the emphysema, which is not relieved by sanguine emissions.

From the sketch which we have given of the most prominent features of the memoir before us, it is evident that the profession is indebted to its author for very material additions to their previous knowledge of the affection of which it treats. His conclusions are, generally speaking, so clearly established, that we are obliged to admit their correctness. In examining the evidence upon which they rest, the reader feels assured that he has arrived at something real and tangible—that he has been made acquainted with positive scientific truth, and not with mere conjecture and supposition. This character of, I had almost said, mathematical accuracy, is peculiarly characteristic of the writings of Dr.

Louis. This is one of the beautiful results of the system which he has adopted, and we cannot conclude without repeating that to him most undoubtedly belongs the credit of having applied it to the investigation of morbid phenomena.
T. S.

ART. XVII. *Du traitement curatif des varices par l'obliteration des veines, à l'aide d'un point de suture temporaire.* Par M. DAVAT. Paris: 1836. 8vo.
On the treatment of Varices by obliteration of the vein, by means of a temporary ligature. By Mr. DAVAT.

Varicose veins are looked upon by many as a complaint of little interest, but the frequency of their occurrence, and the constant solicitations made by those labouring under them for a radical cure, should alone be sufficient to induce the practical surgeon to devote his serious attention to the subject.

To procure the obliteration of the cavity of the vein, is the end proposed in all operations for the cure of the disease, and hitherto has been arrived at in one of three ways, viz: by the ligature, by simple division of the vessel, or by the removal of a portion of it. Each of these methods has had its advocates and decriers, and each in turn has been the favourite one for a time; but experience has shown them all to be so dangerous, that surgeons look upon the performance of either of them as an operation of a most serious nature. Under such circumstances we hail with much pleasure the memoir of M. Davat, bringing forward a new operation for their cure, equally, if not more certain in its results, at the same time that it exposes the patient to infinitely less danger.

The little work before us is divided into three parts. In the first, the anatomy of the superficial venous system of the limbs is treated of. In the second, the different modes in which obliteration of veins may take place is described, as well as the various operations practised for the cure of varices; and in the last is an exposition of the new method of operating, and reports of a number of cases in which it has proved successful. Our notice will be confined to the two last parts only, the first containing nothing that is not already well known to the profession.

By the obliteration of a vein, M. Davat understands its conversion into a white, solid, ligamentous cord; he does not look upon it as *obliterated* when its cavity is obstructed by a fibrinous mass only, as this latter is always temporary, and is invariably removed after a time by absorption.

From experiments performed by himself, he is led to conclude that the obliteration (as he understands the term) of a vein after operations, takes place either from thickening of its coats or from union by the first intention of its internal membrane. The application of a ligature to a vein, does not cause a division of the internal membrane, as in the arteries, but merely excites effusion into the cellular coats of the vessel, and in this way produces thickening of its parietes, and consequent obliteration of its cavity.

The following he states to be the phenomena which occur after a ligature is put upon a vein. 1st. There is an increased quantity of blood carried to the surrounding parts. 2nd. There is an effusion of coagulable lymph in the cellular tissue around the vessel. 3d. The internal membrane contracts, and is thrown into folds by reason of the pressure upon it, but retains its natural colour and thickness, and presents no exhalation of lymph upon its surface. 4th. If the ligature remains until sufficient lymph is effused in the cellular sheath of the vessel to obstruct the circulation, the clot which is shut up is absorbed, and the vein diminishes in size and is entirely obliterated somewhere between the fourteenth and seventeenth days. But if the ligature is thrown off before a sufficiency of lymph is deposited, the folds of the internal membrane become ef-

faced, and the vein, after a short time, again attains its ordinary calibre. In cases where high inflammation arises, the vessel ulcerates, and the ligature becomes loose, so that the ends of the vessel remain open, and either give rise to hemorrhages or else to a phlebitis, which will terminate by suppuration in its interior without causing obliteration of any part of it. The conclusion drawn from these experiments is, that the internal membrane of veins does not throw out lymph after the application of a ligature, as is the case with arteries, so that by this method of operating we can never produce union of their parietes by the adhesive inflammation, but only obliteration by effusion into the surrounding cellular membrane; an obliteration which is uncertain in its ultimate results, requiring a long time for its production, and which is always dangerous and often fatal.

It will be acknowledged by all, that primitive adhesion of the internal coat of the vein is, the result of all others, the most desirable. The attainment of this our author affirms to be impossible by any operation, unless the coats of the vessel be in some degree divided, and its opposite sides kept in contact long enough to admit of the deposit of coagulable lymph, which will take place around the points irritated, and after four or five days become firmly consolidated. The object then, which he proposes, is to wound the internal membrane *slightly*, so as to ensure this exhalation of lymph and its consequence, union by the first intention; and the mode in which he accomplishes this is ingenious, at the same time that it is easy of execution. The patient being properly placed, a band should be applied tightly to the thigh, just above the knee, for the purpose of rendering more prominent the vena saphena. A fold of the skin, including the vein, is then to be pinched up with the left hand, at the usual place of operating below the knee, and a needle, either curved or straight, is to be pushed transversely behind the vein, for the purpose of isolating it from the deeper seated parts. The integuments are then drawn out and held tense by means of this needle, and a second one is made to penetrate successively the skin, anterior and posterior parietes of the vein, after which it is pushed upwards and forwards behind the first instrument, in such a way as to cause it to reappear at the surface a little above the place of insertion, after a second time passing through the sides of the vessel. The needles are then fixed in this situation by a figure of 8 ligature, moderately tight, and their ends removed with the nippers. Twenty-six cases have been treated by this new method, all of which, with one exception, have been followed by cure; and in all, but the one mentioned, without the occurrence of any dangerous or unpleasant symptoms.

So successful a practice should strongly recommend the author's mode of operating to the attention of every surgeon. Nevertheless, we are all so apt to be carried away by novelty, and to have our judgments biassed in favour of new methods introduced by ourselves or friends, and so often make facts bend to the support of our own favourite notions, that the value of the mode of treatment proposed cannot be justly appreciated, until it shall have been more fully tested by other practitioners. Examined coolly in the closet, the advantages which M. Davat's mode of operating offers over all others appears great, and would lead us to pronounce it an excellent one; and, we have given this notice of his memoir, in the hope of making his operation known, and of inducing surgeons in this country to give it an impartial trial, the results of which we hope to be made acquainted with. The operation is simple, demands no division of the skin, causes but little pain, at the same time that the cure takes place at an early period; while any other operation is painful, exacts a long incision of the skin, and even when followed by no bad symptom, requires a comparatively long period for the cure.

G. W. N.

ART. XVIII. *De l'Influence des Saisons sur la Mortalité à différens ages.* Par M. le Docteur H. C. LOMBARD, Lu à la Réunion de la Société Helvétique des Sciences Naturelle à Genève, en Août, 1832.

De l'Influence des Professions sur la durée de la vie. Recherches Statistiques. Par le Dr. H. C. LOMBARD, Médecin de l'Hôpital Civil et Militaire de Genève. Geneve, 1835.

On the Influence of the Seasons upon the Mortality at different ages. By H. C. LOMBARD, M. D. Memoir read at a meeting of the Helvetic Society of the Natural Sciences, at Geneva, in August, 1832.

On the Influence of the Professions upon the duration of life. Statistical Researches, by Dr. H. C. LOMBARD, Physician to the Civil and Military Hospital at Geneva. 1835.

The modern science of statistics seems destined to develop many important facts connected with almost every branch of human knowledge, and not a few which contribute to the solution of physiological questions formerly enveloped in obscurity. Among these last is the subject involved in the first mentioned memoir of Dr. Lombard, the immediate object of which is to determine the variations in the force of the vital powers at different ages, so far as it may be estimated from an exact reference to the mortality occurring at different seasons. The criterion referred to supposes, that when the number of deaths at a certain period of life is found to vary but little in different seasons, the inference may be fairly deduced that the vital powers exist in great energy, and oppose a strong resistance to the causes tending to promote mortality; whilst, on the contrary, a considerable variation taking place in the mortality at different seasons, affords reasons for concluding that the intensity of the vital powers is diminished.

The influence of temperature upon mortality has been ably investigated by Villermé and Milne Edwards, who confined their inquiries to the earliest periods of infancy, and by Quetelet, whose researches were extended to every period of life. The number of our Journal for November, 1831, shows the influence of the seasons upon infantile and adult life in Philadelphia, and presents results remarkably different from those of the European cities that have hitherto been subjected to similar statistical inquiries, especially those of Geneva, as estimated by Dr. Lombard. An examination of the calculations made for various localities, illustrates in a striking manner the destructive agencies predominating in each, as well as the periods of life when these manifest most activity.

The data upon which Dr. Lombard founds his calculations are drawn from the civil register of the city of Geneva, and comprises 17,623 deaths, distributed through 24 years. This number, it is true, must be regarded as too inconsiderable to place the results on the most incontestable footing, but still the accuracy and minuteness which mark the records go far to compensate for the disadvantage in numbers.

To be enabled to appreciate the influence of temperature upon human life at different ages with more precision, Dr. Lombard makes the following division into eight epochs, each of which he supposes to represent a different state of the vital forces.

1. From conception to birth, (still-born.)
2. From birth to one month, (newly born.)
3. From one month to 2 years, (first infancy.)
4. From 2 to 15 years, (infancy and adolescence.)
5. From 15 to 60 years, (vigour of life.)
6. From the 60th to the 70th year, (commencing old age.)
7. From the 70th to the 80th year, (confirmed old age.)
8. From the 80th to the 100th year, (caducity.)

Before noticing the mortality of the several periods, it may be proper to state

that the general mortality of the different months in Geneva, without any distinction of age, shows a very gradual increase and diminution—the minimum corresponding to the month of July, or the warmest month, and the maximum to February, or the period immediately following the greatest cold. Between these two extremes the increase and diminution of deaths is altogether regular, except that the first, which occupies seven months, takes place slowly, whilst the increase is marked by greater rapidity.

These results are in exact accordance with those observed by Quetelet in Brussels and other parts of the Netherlands, but they are precisely the reverse of the course of mortality as influenced by the seasons in Philadelphia and the neighbouring cities on the Atlantic coast, in which by far the greatest mortality takes place in the warmest period of the year. (See this Journal for November, 1831, p. 32.)

When we refer to the results obtained by Dr. Lombard's estimates for each of the periods he has established, we find that the number of still-born attains its maximum in winter, and diminishes regularly till autumn.

The influence of the changing seasons upon the mortality of the newly born, comprising infants from birth to one month, is shown by the fact that during the cold months the deaths are more than double what they are in the more temperate periods of the year.

The influence of temperature does not appear so well marked in the next period, which includes the mortality between the end of the first month and second year, and exhibits the greatest number of deaths in the autumn, whilst the minimum corresponds with spring.

Both of these results are strongly contrasted with those derived from similar calculations applied to our own locality. It must, however, be remarked, that the difference which exists in the division of the periods in the two calculations does not admit of a close comparison.

Between the 2nd and 15th years, the variations observed by Dr. Lombard are inconsiderable, and the vital powers seem to be sufficiently energetic to counterbalance, in a great degree, the influence of the seasons. The little variation observed in the mortality of the monthly periods, shows an increase in the autumn and spring.

In the period which Dr. Lombard designates the vigour of life, namely, between the 15th and 60th years, the maximum mortality corresponds with January, the coldest month, whilst the minimum is exhibited by July, or the warmest month.

After the 60th year, the influence of the seasons becomes more and more strongly marked. From the 60th to the 70th year the maximum and minimum monthly mortality correspond with March and July; the first being the most variable, and the last the warmest month in the year. When the periods are so arranged as to include the seasons, the greatest mortality is found during the winter and the least in summer. The difference between the two extremes is twice as great as in the preceding period.

Between the 70th and 80th years, the maximum monthly mortality corresponds with February, and the minimum with July; the winter being the season when the greatest number of deaths takes place, and summer showing the fewest victims.

The influence of the seasons upon aged persons in Geneva, is strikingly shown by the fact that a monthly comparison of the deaths exhibits two deaths of very old persons in winter for one in summer. The difference between the greatest and least mortality of the very aged, is four times greater than that observed in the period of life between fifteen and sixty years.

The observations of Dr. Lombard are accompanied by tabular statements, presenting the data and estimates formed upon them; from all which he thinks himself justified in concluding, that in Geneva the force of resistance opposed

to the deleterious influences of the seasons, is greatest in the middle of life, less intense between the age of one month and two years, and also from the sixtieth to the seventieth year; very feeble in the first month of life, and at its minimum after the seventieth year.

Among the practical conclusions which Dr. Lombard deduces from his calculations, are the following: The error of those who maintain that new-born infants can be exposed to cold with impunity; which leads him to disapprove of the common practice of exposing children for baptism, or on any other occasion, during the rigours of winter. Such exposure, he thinks, ought not to be made under six weeks; at least.

Another conclusion, of not less importance, is the necessity of preserving the aged from the extreme intemperatures of the seasons, since these suffer from the deleterious influence of cold and sudden changes, even more than infants.

"With old persons," Dr. L. remarks, "the spring and winter double the number of deaths, and it is to be presumed that a great number of them would have escaped danger had they known the source. Let not old persons, therefore, neglect warm clothing, on the first approach of the cold season. Let them sleep in a chamber kept at a proper temperature, and take care not to expose themselves to extremes of weather. Finally, let them be cautious in leaving off too soon their winter clothing, since we have seen that the spring presents a great many deaths of the aged."

We now proceed to the second memoir of Dr. Lombard, in which he examines the influence of professions upon the duration of life, an important subject connected with hygiene, which has been often referred to but never before investigated with the aid of statistical documents. The data upon which he founds his estimates, were furnished by the civil records of Geneva, and include the deaths of 8,488 persons of sixteen years and upwards, whose professions were designated. He exhibits a table in which these 8,488 individuals are distributed so as to show their several occupations, the mean duration of their lives, the number of deaths from accidents or violence, and the mean duration of life after deducting the deaths from accidents. The average of the whole number included in the estimate, is 55 years to each, and this constitutes the standard or mean term with which he compares the influences of professions favourable, and those which are unfavourable, to the prolongation of life.

The last mentioned influences being by far the most numerous, are also the most important to designate, since it is more easy to avoid the offending causes by which the operative classes are surrounded, than to afford these the subsequent care necessary to their welfare.

Dr. Lombard makes a general division of the influences favouring the duration of life, into those which are associated with ease, and such as are connected with activity.

Some of the professions connected with the first division, show an average duration of life far above the mean of 55 years. As for example, magistrates, 69.1; annuitants, 65.8; protestant ministers, 63.8; merchants, 62; goldsmiths, 61.9; weavers, 60.5.

Such results would seem to sustain the conclusion of Finlaison, that the duration of life is very much the same in all those classes of society which have recourse to life insurances, it being of but little consequence whether the individual who insures be of a delicate or robust constitution, provided his circumstances enable him to procure a certain sum each year, and place it with an insurance company. But a view of M. Lombard's table, affords a very long list of exceptions to the general rule of Finlaison, many lucrative professions standing below the mean.

Dr. Lombard observes, that there are some professions which usually enjoy a certain degree of ease; others, on the contrary, where, in consequence of the moderate salaries or earnings, of the members, they are always left in limited

circumstances. There are, however, a large number of professions which ordinarily place those who exercise them in an intermediate state between ease and misery. This view of the subject induces him to classify the different states into three divisions; the first comprehending those in easy circumstances; the second, mechanics and tradesmen; and the third, comprising day labourers. We are pleased to find the medical fraternity occupying a pretty exalted place on Dr. Lombard's list of the liberal professions, the mean of life of our Genevese brethren being put down at 66.4. It further appears that one-third of the physicians and surgeons of Geneva, attain the age of 70, or beyond; one-eleventh die after the age of 80; and four-fifths live beyond the age of 50. This privilege of life, we are sorry to believe, is almost peculiar to the comparatively small locality embraced in Dr. Lombard's calculations. In Prussia, for example, the case is very different; as appears from a memoir published by M. Caspar, of Berlin, wherein he states that out of 624 deaths of physicians and surgeons, only a fourth attained the age of 70; scarcely one in sixteen, the age of 80; and that more than one-half died before attaining their fiftieth year.

M. Caspar furnishes the following list of professions where the members attained, or went beyond, their seventieth year. The number shows the proportion in the hundred deaths of each profession. Theologians, 42; agriculturalists, 40; lawyers, 29; physicians, 24. In Geneva, the theologians are in the proportion of 46; the agriculturalists, 27; the lawyers, 42; and physicians, 33, in one hundred deaths of each profession.

A comparison of the various tables given by Dr. Lombard, shows in the three classes last referred to, a difference between the poor and those living in easy circumstances, of seven and a half years, or about one-eighth of the whole length of life. The following table shows in a condensed form, the uniformity of this result, and the degree of influence exhibited in each of the three classes.

				<i>Average of life above 55 years.</i>
1st. Class.—Men in easy circumstances,	-	-	-	62.2
				<i>Under 55 years.</i>
Ditto,	-	-	-	52.6
				<i>Above 55 years.</i>
2nd. Class.—Tradesmen,	-	-	-	60.7
				<i>Under 55 years.</i>
Ditto,	-	-	-	50.5
				<i>Above 55 years.</i>
3d. Class.—Labourers and workmen,	-	-	-	57.8
				<i>Below 55 years.</i>
Ditto,	-	-	-	49.6

From this view it appears that the duration of life is abridged in proportion as we pass from a class in easy circumstances to one less so. The greatest difference is perceptible between those in easy circumstances and tradesmen, and least so between the tradesmen and labourers.

"We may, therefore," says our author, "consider ease as exerting a very considerable influence upon the duration of life. It is now several years since Dr. Villermé arrived at a similar result, by pursuing a very different course of enquiry, with an entirely different population, in the course of which he showed that the mortality of the various quarters of Paris was rendered greater in proportion to the prevalence of ease, and life prolonged as the extent of misery was diminished."

The second class designated by Dr. Lombard, shows the influence of the active employments upon the duration of life. Those whose occupations are altogether sedentary live a shorter time than those whose labours are attended with exercise in the open air.

With regard to the influences unfavourable to the duration of life, Dr. Lombard gives the first place to the absence of ease and limited pecuniary resources;

circumstances which abridge life, according to his computation, one-eighth of the mean term.

The second influence unfavourable to life, is the existence of mineral or vegetable vapours or powders in the atmosphere surrounding the workmen, the agency of which is so much the more hurtful as the vapours are irritating. These reduce the average duration of life 4.9 years. With certain workmen the effects are still more melancholy, causing many to fall in the flower of their age. The mean of life is longer with those workmen who are surrounded with the dust from animal matters, than with such as respire an atmosphere charged with dust derived from vegetable and mineral substances. This result is, however, according to Dr. Lombard's observations, contrary to what has been remarked in regard to phthisis, which is much more frequent with workmen exposed to the inhalation of dust produced from animal and mineral substances. He also informs us that an impure atmosphere tends much more powerfully to abridge life, when the matters held in suspension are in a state of vapour, so as to be absorbed by the mucous lining of the lungs, than where they are in the state of powder, however fine. The mean duration of life, is 51 for those subjected to vapours, and 53.5 for such as are exposed to powders.

The researches of Dr. Knight, exhibit the effects of these deleterious agents in a strong point of view.* This writer informs us that the workmen of Sheffield, employed in the polishing of steel, rarely attain to an advanced age. Out of 2,500 of these, scarcely 35 reach the age of 50; and only 70 live to 45. The greatest number die before their thirty-sixth year.

The degrees in which the favourable and unfavourable influences are exerted upon the population of Geneva, are thus summed up.

1st.— <i>Favourable Influences.</i>				
Easy circumstances, add to the mean duration of life,				7.5 years.
An active life,	do.	do.	do.	1.4 do.
2nd.— <i>Unfavourable Influences.</i>				
Absence of ease, deduct from the mean duration of life,				7.5 do.
Mineral and vegetable vapours,	do.	do.		4.9 do.
Dust of various kinds,	do.	do.		2.5 do.
Accidents and violence,	do.	do.		2.3 do.
Sedentary life,	do.	do.		1.4 do.

The causes operating in the production of this order of longevity, are thus explained by the author. The magistrates, annuitants, ecclesiastics, retired officers, merchants, &c., occupy the first rank, as the result of the easy circumstances which they enjoy. The same cause operates in favour of the gardener over the farmer, and the merchant over the shopkeeper.

The gardeners, founders, and wood-choppers, are indebted to their active vocations for greater longevity than is enjoyed by writing masters, boxmakers, shoemakers, and tailors, which last are operated upon unfavourably by their sedentary habits.

Painters, varnishers, locksmiths, enamellers, toymakers, and cabinetmakers, occupy the lowest place in the scale of longevity from their constant exposure to deleterious vapours. Finally, life is abridged in a marked degree, among boatmen and postilions, by the accidents to which their employments expose them.

It must be observed, that several of the agencies alluded to counteract each other. It is thus that the sedentary life of some operatives is counterbalanced by their state of ease, whilst the active habits of the wood-cutters tend to diminish the effects by which their poverty would otherwise be followed. A

* See his paper on Grinder's Phthisis, North of England Medical and Surgical Journal for August and November, 1830; also this Journal for November, 1831, p. 248.

certain number of professions would, therefore, occupy very different positions in the scale of comparative mortality, if they were only subjected to the operation of a single influence.

G. E.

ART. XIX. *Practical Observations on the Venereal Disease, and on the Use of Mercury.* By ABRAHAM COLLES, M. D., one of the Surgeons of Dr. Stevens's Hospital, and lately Professor of Surgery in the Royal College of Surgeons, in Ireland. London, 1837, 8vo. pp. 351.

The name of Colles, so eminent from its surgical associations, is, we fear, not destined to be raised higher by the work he has just given us. We have not as yet had an opportunity of minutely examining it, nor do we feel any anxiety to do so, after the revelations which a rapid glance has afforded. We have seldom, if ever, met with a book from which some useful instruction was not to be gained, although its extraction has often been attended with the sacrifice of time and pains not adequately rewarded. Such, we fear, would be the result of a close sifting applied to the work of Mr. Colles, the obsolete and heterodox opinions spread through which are by no means atoned for by the valuable facts and interesting cases here and there to be met with. The profession has had a long struggle to disengage itself from some of the old dogmas, and have happily succeeded in a great degree. Dr. Colles, however, would bring it almost back again to the lessons of Hunter. Witness the following opinions relative to the administration of mercury.

"When mercury is exhibited for the use of any other disease, as well as syphilis, we shall find that its sanatory impression on the disease is contemporaneous with its action on the salivary system, and that when the latter effect has not been produced, neither will the former have occurred. If, then, it be so very generally found, that whenever mercury exercises a salutary influence over disease, it at the same time always affects the salivary organs; and if, again, whenever it fail to produce this latter effect, it be also found altogether inoperative in the cure of disease, it is surely a fair and legitimate conclusion to affirm that ptyalism marks the natural and salutary operation of this mineral."

The efficacy of mercury was formerly estimated by the amount of salivation which it excited. Thus, certain venereal symptoms were thought to require a salivation of one pint a day; others two pints, and so on to four or six pints a day in the more obstinate cases. But Mr. Colles desires it to be understood, that he does not wish to estimate the efficacy of mercury by this old measure:

"The degree of ptyalism that I am always anxious to attain," he observes, "is merely an increased secretion of saliva, accompanied by swelling and superficial ulceration of the gums, and sometimes also of portions of the lining membrane of the cheeks and lips; this I am desirous of attaining as a sort of index which denotes first, that the mercury is acting in a safe and salutary mode upon the system; and secondly, that it displays that degree of power or energy of action, which will be sufficient to eradicate the disease."

These humane and philosophical intentions are accomplished by recourse to therapeutic means equally original, namely, the administration of two grains of calomel every night, and the unseemly application of frictions with mercurial ointment to the thighs. After using these, we are told that,

"About the sixth or seventh day ptyalism is fairly established, the gums are swollen, and appear as if inclined to separate from the teeth; they also present a slight degree of ulceration on their edges, especially in the intervals between the teeth; the lining membrane of the cheeks, opposite to the last molares, assumes a leaden colour, and is also swollen, so as to bear the impressions of the teeth; the soft palate also is often swollen, and more red than natural, as if it were slightly inflamed."

But we forbear to trace the description further. Let it not be supposed that this treatment is reserved for the chronic and secondary forms of syphilis, when there might possibly be some excuse, although we regard salivation in any degree as wholly unnecessary and generally injurious in every stage of the disease. The treatment here laid down by Dr. Colles is supposed to be adapted to "the simple case of a young man affected with primary venereal symptoms, but in other respects in perfect health." To resort to measures the direct tendency of which are unquestionably to interfere with the recuperative powers of the system, aggravate by general stimulation the primary symptom, light a train by which this is transmitted to some other tissue, and produce lesions wholly uncalled for, in some of the most delicate structures and important organs, is to set at nought the evidence of the most ample modern observation, and resign one's self to blind routine and the cant of the old pathology. That primary symptoms do occasionally disappear under the untoward treatment advised by Dr. Colles, cannot be doubted. He would ascribe their removal to the eradicating powers of the mercury, whereas we should be inclined to believe that the patient recovered in spite of the action of that agent.

With such views, upon fundamental points, we regard Dr. Colles's book as calculated to retard rather than promote our knowledge of the pathology and treatment of the venereal disease.

In our next number we hope to introduce to our readers a work of a very different stamp,—that of M. Lucas-Championniere; a work based upon the observations of Mr. Cullerier, a practitioner of the highest character, and whose opportunities of studying the disease in question have been unsurpassed.

G. E.

ART. XX. *A Discourse on some of the Diseases of the Knee-joint; delivered before the Massachusetts Medical Society, at their annual meeting, May 31, 1837.* By GEORGE HAYWARD, M. D., Professor of the Principles of Surgery and Clinical Surgery in Harvard University, and Surgeon to the Massachusetts General Hospital. Boston: 1837. pp. 28, 8vo.

Restricted, as an orator necessarily is, to very narrow limits, a minute exposition of the phenomena and modes of treatment of a class of diseases involving so many and important considerations as that of the knee-joint, cannot be looked for in an address like the present. The author has not, indeed, attempted it. He has judiciously aimed merely at tracing the prominent features of some of the affections of the important articulation just named, considering them as they affect the synovial membrane, the articulating cartilages, and the bones, and he has accomplished this object well. He has certainly not presented us with any striking new views, but he has pointed out the best means of studying the diseases in question; has given us a good, plain, common sense sketch of their characters, diagnosis and treatment; and he has the further merit of calling attention to an obscure and important subject—one which has received from surgeons far less attention than its importance ought justly to claim for it, whether we consider the sufferings these diseases cause or the serious consequences they involve.

ART. XXI. *Address delivered before the Medical Society of the State of New York, February 8th, 1837.* By JAMES M'NAUGHTON, M. D., President of the Society. Albany, 1837. 8vo. pp. 40.

The state of the profession and of medical instruction in the United States is such as to call loudly for reform. The thriving condition of quackery, with the numbers and boldness of its professors—the host of half educated young men annually thrust into the ranks of the profession, by the numerous institutions authorized to grant diplomas, and the quarrels and disorganizations of so many of our medical faculties, all tend unequivocally to establish this fact. Medical schools have so multiplied as to lead, in too many cases, to a rivalry of the most injurious kind,—a competition to obtain students by holding out temptations in the facility and cheapness of obtaining a license to practice—and professional chairs are so numerous, that the occupancy of one can scarcely be considered a distinction, or the office of instructor any longer a peculiarly honourable one. An essential preliminary step, to devising a remedy for these evils, is to calmly investigate the history of medicine in this country, with the view of determining the causes of the existing condition of things. So far as regards the state of New York, this has been ably done by the author of the address, the title of which is at the head of this article; and we attach so much value to his labours that we shall present a full summary of them before our readers.

“No general law regulating the practice of Physic and Surgery was enacted during our colonial state—the only law relating to our profession, passed before the revolution, was in 1760, and was limited in its operation to the city of New York. The preamble to the act sets forth the reasons which led to its passage. It is in these words:

“‘Whereas many ignorant and unskilful persons in Physic and Surgery, in order to gain a subsistence, do take upon themselves to administer physic, and to practice surgery, in the city of New York, to the endangering the lives and limbs of their patients; and many poor and ignorant people inhabiting the said city, who have been persuaded to become their patients, have been great sufferers thereby;—for preventing such abuses in future, be it enacted,’ &c.

“This act provided, that every student should undergo an examination, and receive a diploma or license. It was further provided, that a fine of five pounds should be recovered from any one who practised without complying with the provisions of the act. This act seems to have been continued in force in the city of New York until the separation from the mother country. The lives of the people living beyond the bounds of the city do not appear to have received any protection against empirics.

“On the 27th of March, 1792, another act was passed, limited to the city and county of New York. The reasons set forth in the preamble for the passage of this, are very similar to those relative to the law of 1760. ‘Whereas, many ignorant and unskilful persons, presume to administer physic, and practice surgery within the city and county of New York, to the detriment and hazard of the lives and limbs of the citizens, for the prevention of such abuses in future,’ &c. This act required that the student should study Medicine with some authorized practitioner for two years, if a graduate of some college, and three years, if not a graduate—that he should be examined by three practitioners, (other than those with whom he studied,) in presence of the Governor and certain other public officers—and if approved, that he should receive a license to practice. In this act it was provided, that every person practising without a license, should be fined seven pounds, and be incapable of maintaining a suit in any court for services rendered. Doctors in medicine were allowed to practice without a license.

“The first general law regulating the Practice of Physic and Surgery, was passed in 1797. By the act of 23d March of that year, every student was required to study four years, if not a graduate, and three if a graduate. It was also

enacted, that any person practising without a license, should pay a fine of twenty-five dollars. It was further provided, that in case of some sudden emergency, any person might administer medicine, or even perform surgical operations; but no demand for compensation for the services rendered, could be lawfully made.* This act continued, without material alteration, until April 4th, 1806, when the law incorporating the State and County Medical Societies was passed.†

“By that law every county in the state was authorized to form a County Medical Society, which, when organized as prescribed in said act, were declared to be ‘bodies corporate and politic, in fact and in name,’ each bearing the name of the county in which it was instituted. The several County Societies were empowered to examine students, and if found qualified, to grant a diploma, or license to practice.

“The State Medical Society was instituted by the same act. It consists of a limited number of members, called Permanent, and of a Delegate or representative from each of the County Societies, chosen for a limited time. By its charter, it is authorized to examine students, who present themselves for examination, either by original application, or by appeal from the decision of the Censors of the County Societies. It is also empowered to regulate the County Societies, provided its ordinances do not conflict with the laws of this state, or of the United States.

“By the act of April, 1806, it was declared, that no person should practise physic or surgery in this state, without having first received a license as directed; and that in the event of his practising, without a license, he should not be able to recover, in any court, for services rendered.

“Although prior to the passage of the above act, there existed some Medical Societies in New York, and other places, their influence was limited as well as their privileges. It was not until the organization of the State and County Societies took place, that the profession acquired a regular form. A gentleman who took an active part in promoting the passage of the act, speaking of the state of the profession at the time, says:

“‘Those who witnessed the original and progressive settlement of the northern and western sections of this state since 1790, will recognise the mania that infatuated the emigrants from the east, and the ambitious projects formed by those who assumed the title of Doctors. Many who had never read a volume in medicine were suddenly introduced to an extensive practice, and to a reputation of such imposing authority as to control the opinions of their superiors in science, and to prescribe rules of practice for their government. Consultations were generally distinguished for gross controversies at the bed-side of the patient, whose health and life were often immolated to the ignorance, prejudices, or discordant theories of the contending physicians.’”‡

In three months after the passage of the law, no fewer than twenty county medical societies were formed, pursuant to its provisions, and in two years there was scarcely a county in the state of any considerable population, without its medical society.

“From this time,” says our author, “the medical profession began to acquire character and respectability. The irregular proceedings, by which certain members of the faculty had hitherto succeeded in acquiring notoriety and credit among the people, received a check. To become fit associates for men of character and standing in the community, required the cultivation of urbanity and good breeding on the part of those who wished to become members of the societies, so that, by degrees, the great body of the profession became subject to one code of medical ethics, the obligations of which were generally acknowledged. There have always, however, been individuals, and not a few such are still to be found, who form exceptions to the general character of the profession; but, it is acknowledged on all hands, that, both in town and country, there is much more harmony,

* Graduates and Licentiates of Colleges of Medicine were permitted to practice without further examination, upon filing a copy of their diploma in the Secretary of State's office, or in the County Clerk's office.

† I am indebted for the above references to a Report of Assembly, 1835, by Hon. Edward Livingston.

‡ Dr. Stearns, New York Medical and Physical Journal, 1828.

much more courtesy, and much more liberality of feeling, subsisting among medical men, than formerly. And what is more important to the public—there has been a proportionate advancement in education, general and medical, among them. Their frequent meetings in the societies, have made them better and more extensively acquainted with each other, while it has produced more ardour and emulation for professional distinction.”

The first meeting of the State Medical Society took place on the 3d February, 1807, when sundry resolutions for the promotion of medical science were adopted; since this period the society has not intermitted its exertions, and Dr. M'Naughton asserts that, “whatever progress has since been made in medical education, has been directly, or indirectly, the result of its efforts.”

“The act of 1806, remained in full force, without any important alteration, until the general revision of the laws in 1813. In all the acts relative to the practice of medicine up to this period, some penalty was inflicted upon such as should be found practising as physicians and surgeons, without a license; and in most of the acts, in order the more effectually to protect the ignorant and unwary against the arts of empirics, impostors, and pretenders to medical skill, it was provided that none but the regularly licensed should be able to claim remuneration for services rendered, or maintain a suit for such purpose in any court in the state.

“Pretenders to medical skill have abounded in all ages and countries, who, by various arts, acting on the prejudices, ignorance or credulity, of the multitude, have for a time acquired credit, until their incapacity became exposed, by the suffering, or even death, of their patients. Nothing short of severe penal enactments has been sufficient to repress their unprincipled tampering with human life; and even these, (so strong is the propensity to believe in the marvellous and mysterious,) are insufficient to protect society against the devices of quack practitioners of the healing art.

“It remained, however, for the state of New York to legalize quackery, by positive enactments. The general provisions of the law of 1806 were retained in the revision of 1813, with this most extraordinary proviso:—‘That nothing in this act contained shall be construed to extend to debar any person from using, or applying, for the benefit of any sick person, any roots, barks, or herbs, the growth and produce of the United States.’*

“Any advantages which the regular profession might be supposed to derive from the preceding sections, regulating the term of study, and the qualifications for license, were effectually nullified by this singular provision. Under cover of this provision, any person might practise medicine; for among the roots, barks, and herbs of the United States, almost any article in the whole range of the *materia medica* might be exhibited with little risk of detection. For even if the proof could be made clear, a troublesome process of law was necessary to secure the conviction of the offender. The witnesses for the prosecution generally must be physicians, whose evidence is, on such occasions, received with suspicion and disfavour by juries; so that in fact, all the pains and penalties declared against irregular practitioners of medicine, have, for years, been almost a dead letter. A few prosecutions have taken place, and convictions been obtained; but, I believe, on almost all occasions, the sympathy of the public has been on the side of the offending party, while nothing but odium has fallen to the share of the medical profession, for aiding the prosecution. The provision of the law permitting the use of the roots, barks, and herbs of the United States, has been repealed, re-enacted and again repealed since 1813. It is now in full force since 1835, so that all can use these favourite articles for themselves or others, without fear of the law, whatever other causes of fear there may exist in connexion with their administration.”

Thus far no attendance on medical lectures is demanded, or even mentioned, in connexion with the requirements for license to practice, although a medical college has been in existence in the state since 1792, and resorted to by a

* In the law of 1797, the use of domestic remedies, “without fee or reward,” was allowed, and in that of 1807, the roots, barks, &c. of the United States, were excepted from penalty.

considerable number of students. Indeed, no inducement was held out for such attendance until 1818.

"In a law passed that year, by the legislature, it was enacted, that the regular term of study should be four years, from which one year might be deducted, if the student had attended one full course of lectures at some incorporated medical institution in this state or elsewhere. This last provision, although not positively requiring attendance on lectures, has had a more important influence on the spread of medical education, in this state, than any other provision in the statutes regulating the practice of physic and surgery. At first, most of the students attended lectures, rather with a view to shorten the term of study, than from any expectation of special benefit from the lectures—so little were the great body of practitioners aware of the advantages the public schools possessed over private offices, for the instruction of students."

A medical faculty, composed of six professors, was first organized in New York in 1767, under the charter of King's (now Columbia) College, and the year following, the school was opened. In 1769, through the exertions of the late Dr. Bard, steps were taken to found a hospital, to render the course of medical instruction more complete. A subscription was raised, and a building commenced, but when nearly completed it was destroyed by fire. It was rebuilt, however, and prepared for patients in 1791. The troubles that ended in the revolution at this period began—the lectures were discontinued during the war—and not again resumed until some time after the peace.

In 1792, the trustees of Columbia College re-organized the medical faculty, consisting, as before, of six professors, and the school was re-opened with the fairest prospects of success, and continued to rise in character and to increase in the number of its pupils until 1807, "when, in an evil hour," observes our author, "*another medical school was established in the same city.*"

"On the 3d of March 1807, a memorial was presented to the Regents of the University, by the Medical Society of New York, praying for the incorporation of a College of Physicians and Surgeons—which prayer was granted. By the charter, *all the authorized practitioners of medicine in the county, at the time, more than one hundred in number*, were declared trustees or members of the college. The regents, wisely, as the event proved, reserved to themselves the right to appoint professors, and to modify, or entirely annul, the charter. At a subsequent session of the legislature, the sum of \$20,000 was granted as an endowment.

"The school then went into operation, and entered the field of competition with its elder sister, the school of Columbia College. 'As soon as the new college was established,' says a candid historian, 'there commenced a spirit of rivalry and competition between the two schools, which led to the most disastrous consequences. After a long and bitter contest between the two parties, the friends of medical science interfered, and arrested the progress of difficulties, which had nearly proved fatal to both institutions.'*

"In the mean time, the College of Physicians and Surgeons, with 'its multitude of counsellors,' enjoyed neither external prosperity nor internal harmony. Matters came to a crisis in 1811. On the 1st and 25th of March of that year, five several communications were made to the regents, by different parties in the college, stating their respective views and grievances. These were submitted to a committee of the board of Regents, and in consequence of their suggestions, a new charter was granted in June 1812, differing in many respects from the former one. The number of trustees was reduced to twenty-five; but power to remove them was not reserved as in the original charter, hence many of the subsequent troubles of the institution.

"A union between the Faculty of Medicine of Columbia College and the College of Physicians and Surgeons took place in 1814. From this time a new era for the College of Physicians and Surgeons began. It rapidly acquired fame, and a corresponding accession of students, from every part of the United States, from the West Indies, and from the British provinces. Nothing but a vicious

* Lecture at the opening of the Medical Department of the Columbian College, by Thomas Sewall, M. D., &c.

organization could prevent its rivalling the school at Philadelphia; but, unfortunately, it contained within itself, the elements of discord and decay. The Board of Trustees *were mostly medical men, between whom and the professors, harmony could not be maintained.* Their differences ran so high, that in the spring of 1825, a committee of investigation was appointed, by the regents, before whom the professors and trustees appeared. A very full and able report of the affairs of the college, was made to the regents, by lieutenant-governor Tallmadge the chairman of the committee. From this report, it appears, that the college had received from the state, as endowment, in all, \$66,457 27 cents, besides a botanical garden, for which the state paid 75,000, to the late Dr. Hosack.

"The difficulties between the trustees and professors could not be adjusted; in consequence of which, and a reluctance to submit to certain regulations made by the regents, the professors, in a body, resigned their commissions."

The regents forthwith appointed a new faculty, who commenced their labours the ensuing season; whilst the ex-professors immediately organized another medical school in opposition. The latter first attached themselves to Rutger's College, in the state of New Jersey, but this connexion was rendered unavailable by an act of the New York legislature, "declaring all degrees conferred by any college out of the state, on students studying at an institution within the state, null and void, as licenses to practice medicine." They next established a connexion with Geneva College; but this connexion being illegal, a very judicious law of the state declaring that *no college shall "have or institute a medical faculty to teach the science of medicine in any other place than where the charter locates the college,"* was dissolved by a process issued from the supreme court, "and Rutger's Faculty of Geneva College ceased to be numbered among the medical schools of the state. But, unfortunately, its discontinuance did not heal the divisions existing in the profession in New York. It was divided into two parties, one friendly to the state school, the other opposed to it. This unhappy state of things still remains." * * *

"The College of Physicians and Surgeons of the western district, was the next medical school instituted by the state. It was incorporated in 1812. It is located at Fairfield, in Herkimer county—a small country village. The legislature granted \$15,000, to be raised by lottery, as an endowment. The greater part of this fund was expended in the erection of buildings, and in paying small salaries to the earlier professors. As might have been expected, from the remoteness of the location, and the small number of students, who under the medical law then existing, attended lectures, the school was, at first, not very successful. It spun out a feeble existence until 1818, when its funds became exhausted—the trustees became discouraged, and the professors were on the point of throwing up their commissions. As a last resort, application was made to the legislature for relief. An annuity of \$1000, for five years, was granted for its support. The act relative to the practice of physic and surgery, was also amended, so as to shorten the term of study one year, to such as should have attended a full course of lectures. From these two causes, aided, in all probability, by others, the school began to flourish. Its pupils each year became more and more numerous, until the class rooms could not accommodate them. Further aid having been refused by the legislature, the professors, at their private expense, remodelled the whole interior of the college—extended the class rooms, and fitted up apartments for the museums of anatomy and natural history. They also erected a large stone edifice, four stories high, to accommodate, at a low rate, the students with lodging rooms.

"Every thing promised a prosperous course for the school, and the professors flattered themselves that they were about to be rewarded for their exertions, and remunerated for their expenditures. In the session of 1834, there were 217 students in attendance—a larger class than ever attended at a country medical institution."

In the autumn of 1834 Geneva College formed a Medical Faculty, in connexion with its other departments, but under a different government; leaving its management to the faculty itself, and a board of curators. As, however, no degree at that time conferred in the state was a license to practice, except that

granted by the Regents of the University, applications was made to that board to confer the degree of M. D. upon such as the medical faculty should recommend, and at the same time to the legislature for a law declaring the degree of M. D. conferred by Geneva College a license to practice medicine.

"Both applications were strenuously opposed, by parties who deemed themselves interested, both on private and public considerations. It was contended, that the number of students in the state, could not support more than two schools—one in the city and one in the country—that all could be as well taught in these two, as in three or four—that *it would promote neither the interests of the profession, nor of the public, to multiply schools beyond what could be adequately sustained—and that it would lower, instead of elevating, the standard of medical education.* It was further contended, that, even if another medical school were wanted, it should be put under the same regulations as the other colleges.

But these arguments were of no avail, and a law giving the desired privilege was enacted by the legislature.

This school "has completed its third session. The number of students in attendance last session, was between 50 and 60, and at the institution at Fairfield, 164—being an aggregate not exceeding the class in attendance at Fairfield alone in 1834. Even if the two schools were to divide equally the number of students between them, neither of them could be said to be in a flourishing state. There is not support enough for two respectable schools in the country; and it is more than probable, that at no distant period, one or both of the existing ones must be discontinued."

"Such," observes our author, "is a brief, and, of course, rather imperfect, sketch, of the course of medical legislation, and of the history of the medical institutions of this state, up to the last session of the legislature. By an amendment to the act regulating the practice of physic and surgery, passed last session, no person admitted to practise in any other state, or country, is authorized to practise in this state, until he shall have received a license from the censors of the State Medical Society. This amendment was found necessary, on account of the difficulty of determining the genuineness of the credentials, presented by foreigners. In several instances, the papers were ascertained to be forged, and in some others, there were well founded suspicions, that the bearers of the diplomas were not the persons to whom they originally belonged. Examination alone, in such cases, can protect the public against imposition. In other instances, persons going out of this state, or coming in from other states, were known to have received diplomas, without complying with the requirements of the laws of this state. The legislature were also, in all probability, influenced by the consideration, that in several of the contiguous states, and in the Canadas, the licentiates, and medical graduates, of our colleges, could not practise without an examination."

Our author next points out some of the defects in medical education—the greatest he considers to consist in the preliminary education of students of medicine. This defect exists in every State in the Union, and no measures for the elevation of the character of the profession can be successful, until evidence of adequate attainments is required of young men before their admission as students of medicine.

Dr. M. gives some statements illustrative of the facility with which a medical degree may be obtained in some of the New England colleges, which we trust are exaggerated; at all events, they are so discreditable, that we hesitate to transfer them to our pages.

"In regard to dissections," says our author, "all our schools labour under disadvantages. There is no legal mode of obtaining subjects. It is by law declared felony to be concerned in the exhumation or dissection of a human body. The only subjects legally obtained, are the bodies of convicts who die at the state prisons, not claimed for burial by relatives. If all who die at the state prisons were given up, the supply would be inadequate. The bodies of those only who die in winter can be of any use, and these seldom exceed two or three during the season. Few as these are, those from the prison at Auburn are divided between the schools at Fairfield and Geneva. The result of this narrow policy is, that the schools, par-

ticularly the country ones, are scantily supplied—and that in all, the supply is precarious and expensive;—for it cannot be supposed, that those who procure subjects, at the hazard of liberty and life, will expose themselves, without compensation, corresponding with the risk they run.”

Dr. M. concludes with the following just observations on the inadequate endowments of institutions for medical instruction, and which are of nearly general application.

“Our medical schools are now supported, almost entirely, at the expense of their respective professors. Is this creditable to the great and prosperous State of New York? What is the reason that such a distinction has been made between the medical colleges and the colleges of arts? Do not medical schools require libraries, chemical and philosophical apparatus, and museums of anatomy and natural history? Can it be expected that professors, from their scanty receipts, will furnish all these, and pay contingent expenses to boot? And if they do, can it be reasonably hoped, that we shall ever possess institutions that can equal the liberally endowed establishments of other countries? Is not the community as much interested in having well endowed medical colleges as literary ones? If so, why has the state made such a distinction between them, in the bestowment of her bounties?

“I do not mean to intimate, by these remarks, that the literary institutions have shared too liberally the bounty of the state. On the contrary, all of them are inadequately provided for. There is scarcely a petty principality in Germany, that cannot boast of a University, possessing a library, containing more books than all our colleges, theological, medical and literary, put together. Some of them have also splendid collections in natural history and other departments of science. I need hardly mention here, that in all these our colleges are sadly deficient; and there is not a single botanical garden in the state.

“Since the amendment of the constitution in 1822, not a dollar has been appropriated by the legislature to elevate our literary or medical colleges. In the mean time millions have been expended on other objects. Canals and rail-roads have been made, and others are in progress in all directions. Every thing, in short, has been done for meliorating the physical condition of the citizen; but what has been done for his moral and intellectual improvement, by our constituted authorities? Nothing—literally nothing.

“Are we never to possess but common schools, and academies, or institutions whose limited means permit them to rank no higher? Must our children encounter the storms of the Atlantic to seek, under other governments, advantages denied them under our own? We hope, that a more liberal spirit will prevail, and that the legislature will set apart some of the wealth of the state, for the purpose of placing our higher seminaries of learning on such an eminence as will enable their professors to look around on kindred institutions in other countries, without feelings of humiliation or consciousness of inferiority.”

ART. XXII. *A Report of the New Haven Medical Society, on the expediency of repealing that Section of the Medical Laws of this State, which excludes irregular Practitioners from the benefits of law in the collection of fees.* New Haven, 1837. 8vo. pp. 16.

The General Assembly of the State of Connecticut, at their Session in May, 1836, received petitions from various parts of the state, praying for a repeal of the law which enacts that, “no physician or surgeon, who shall have commenced practice since the year one thousand eight hundred, or who shall hereafter commence practice, shall be entitled by law to recover any debts or fees for such practice, unless he shall have been duly licensed by some medical society or college of physicians.” These petitions are said to have been got up, and principally signed, by the friends of what purports to be a new system of medicine called the “Thomsonian system.” It appears to us to argue a deplorable state of things, when such petitions should receive any attention. The

legislature of Connecticut, did not, however, follow the disgraceful example of a neighbouring state, and grant the prayer of the petitioners; but postponed the petitions to the next session, with an order for a citation to the medical society. In consequence of this citation the Medical Society of New Haven county, adopted the report, the title of which we have given, as expressive of their views in regard to the proposed measure.

This report furnishes a conclusive demonstration of the principle, "*That it is the right and duty of government to protect the people in every possible manner against any trade, craft, or profession, in which the public has peculiar interest, and in which the temptations to defraud and deceive are great.*"

Writing as we do for the profession alone, it will be needless for us to repeat the arguments adduced by the society; it would be going over ground with which our brethren are familiar. But this report should be inserted in the newspapers and widely circulated, so that it may get into the hands of unprofessional persons—those most interested.

ART. XXIII. *An Examination of Phrenology; in two Lectures, delivered to the Students of the Columbian College, District of Columbia, February, 1837.* By THOMAS SEWALL, M. D., Professor of Anatomy and Physiology. Published by request. Washington City, 1837: pp. 70, 8vo., with 8 plates.

This is the most dispassionate examination of the phrenological doctrine, and the strongest array of arguments against its validity, that we have met with. The first lecture comprises a sketch of the origin and progress of phrenology, with an exposition of its leading doctrines, and of the principles upon which it is founded. In the second lecture the question is examined of how far the science is reconcilable with the anatomical structure and organization of the brain, the cranium, and other parts concerned. The subject is treated in a very plain and lucid manner, so as to be perfectly intelligible to general readers; and is, moreover, illustrated by some well executed and interesting plates. The learning and high standing of the author entitle his views to a respectful and attentive consideration; though we must confess that we are not prepared to admit the validity of all his facts, or adopt implicitly all his conclusions.

ART. XXIV. *Directions for the establishment and government of Lunatic Asylums.* Translated from the French of Brierre de Boismont, M. D., by E. QUINCY SEWELL, M. D. (From the Transactions of the Medical Society of the State of New York, Vol. III.)

The prize offered in 1834 by the Society of the Medical and Physical Sciences at Brussels, for the best memoir on the establishment of a Lunatic Asylum—its location, the disposition of its grounds, its internal arrangement, government, and medical attendance, was awarded to the author for this essay. It is a highly interesting paper, and particularly so at this moment—several of the States of the Union being engaged in the construction of asylums for their insane poor. We have recently devoted so much space to the subject, (see our last number,) that we need on the present occasion only recommend the memoir of Dr. Brierre to the attention of those interested, and return our acknowledgments to Dr. Sewell for the service he has done in rendering it generally accessible through a translation.

QUARTERLY PERISCOPE.

FOREIGN INTELLIGENCE.

SPECIAL ANATOMY.

1. *On the Elementary Structure of Muscular Fibre of Animal and Organic Life.*—FREDERICK SKEY, Esq. has presented to the Royal Society an interesting memoir on this subject.

The author concludes, from his microscopic examinations of the structure of muscular fibres, that those subservient to the functions of animal life have, in man, an average diameter of one 400dth of an inch, and are surrounded by transverse circular striæ varying in thickness, and in the number contained in a given space. He describes these striæ as constituted by actual elevations on the surface of the fibre, with intermediate depressions, considerably narrower than the diameter of a globule of the blood. Each of these muscular fibres, of which the diameter is one 400dth of an inch, is divisible into bands or fibrillæ, each of which is again subdivisible into about one hundred tubular filaments, arranged parallel to one another, in a longitudinal direction, around the axis of the tubular fibre which they compose, and which contains in its centre a soluble gluten. The partial separation of the fibrillæ gives rise to the appearance of broken or interrupted circular striæ, which are occasionally seen. The diameter of each filament is one 16,000dth of an inch, or about a third part of that of a globule of the blood. On the other hand, the muscles of organic life are composed, not of fibres similar to those above described, but of filaments only; these filaments being interwoven with each other in irregularly disposed lines of various thickness; having for the most part a longitudinal direction, but forming a kind of untraceable net-work. They are readily distinguishable from tendinous fibres, by the filaments of the latter being uniform in their size, and pursuing individually one unvarying course, in lines parallel to each other. The fibres of the heart appear to possess a somewhat compound character of texture. The muscles of the pharynx exhibit the character of animal life; while those of the œsophagus, the stomach, the intestines, and the arterial system, possess that of inorganic life. The determination of the exact nature of the muscular fibres of the iris presented considerable difficulties, which the author has not yet been able satisfactorily to overcome.—*Transactions of the Royal Society*, for 1836.

2. *On the Connexion of the anterior columns of the Spinal Cord with the Cerebellum.* By SAMUEL SOLLY, Esq.—The exact line of demarcation between the tracts of nervous matter, subservient to motion and to sensation, which compose the spinal cord, has not yet been clearly determined. The proofs which exist of a power residing in the cerebellum which regulates and controls the actions of muscles,

would lead us to suppose that the fibres of the motor nerves are continuous with those of the cerebellum; but hitherto no observations have been made which prove the existence of this connexion; and it is the object of the author, in this paper, to establish, by a more careful examination of the anatomical structure of this part of the nervous system, such continuity of fibres between the anterior columns of the spinal cord and the cerebellum. The corpora pyramidalia have been hitherto considered as formed by the entire mass of the anterior, or motor columns of the spinal cord; but the author shows that not more than one half of the anterior columns enters into the composition of these bodies: and that another portion, which he terms the *antero-lateral* column, when traced on each side in its progress upwards, is found to cross the cord below the corpora olivaria, forming, after mutual decussation, the surface of the corpora restiformia; and ultimately being continuous with the cerebellum. These fibres are particularly distinct in the medulla oblongata of the sheep and of the horse. The author conceives that the office of the antero-lateral columns is to minister to the involuntary, as well as to the voluntary movements: that the facial nerve arises from both the voluntary and involuntary tracts; and that the pneumogastric nerve arises both from the involuntary and the sensory tracts.—*Ibid.*

3. *Unusual course of the internal pudic artery.*—Dr. MORTON communicated to the University College Medical Society, at their meeting of the 17th of March last, a drawing with the details of a dissection of a male subject, in which the internal pudic artery, instead of running its usual course, did not pass out of the pelvis, but ran almost directly forwards along the side of the bladder and prostate. The body was that of a man about 40 years of age. On the left side the internal pudic artery, springing from the internal iliac, opposite the great sacro-sciatic notch, passed forwards and inwards to reach the under surface of the pubic symphysis, at which point the artery emerged from the pelvis, and ran along the upper surface of the penis, as the arteria dorsalis penis. In the first part of this course the vessel lay close to the side of the bladder, within the levator ani muscle, a little above the vesiculæ seminales; and as it passed along the lateral surface of the prostate, to which it was firmly bound down by the fascia covering that body, the artery lay directly across the line of incision made in the lateral operation of lithotomy. The vessel ascended, in an oblique direction, along the gland from its lower and posterior angle to the symphysis pubis. In this part of its course, the artery gave off no branches. As it was leaving the pelvis, a small branch passed backwards upon the upper surface to the bladder, to which it was distributed, and between the pubic symphysis two branches passed off to the corpus cavernosum and to the bulb of the urethra; the latter gave off the transverse artery of the perineum, and also the superficiales perinei. The internal pudic on the right side ran the usual course, along the inner surface of the ischium. From this arrangement of the vessel, it was very certain that had the lateral operation of lithotomy been performed upon this individual during his life the artery must have been cut across, and a very alarming, if not fatal, hemorrhage ensued, as happened to the late Mr. S. Shaw during an operation in the Middlesex Hospital.—*British Ann. Med.*, Feb. 24, 1837.

4. *Observations on the best Mode of Demonstrating the Internal Structure of the Heart, and on the Septum of the Auricles in Man.* By Professor RERZIUS.—With a view to obtain a more instructive representation of the heart in its natural state than has hitherto been done, the author has for some time pursued the following method, which exhibits the cavities and the situation of the valves in a distinct and correct manner. The heart having been removed from the subject, in connexion with the liver, the venæ cavæ, the aorta, and the lungs, and having been properly freed from blood by injections of water, is steeped in a mixture of oil of turpentine and spirits of wine. The cavities are then amply injected through the pulmonary and superior venæ cavæ, the aorta, and the pulmonary artery, with a mixture of white wax and oil of turpentine. As soon as the mass is firm, the heart, together with the great vessels, is separated from the rest, the extremities of the vessels are tied, and the preparation, having been cleaned with the scalpel, is left to dry. When thoroughly dried, it is macerated in spirits of turpentine, till the wax is softened or entirely dissolved. In this manner the heart and arte-

ies are emptied after the walls have dried over the wax forms, which were true casts of the natural cavities, their septa and valves, &c. The parietes themselves, being impregnated with turpentine, lose little of their natural thickness. The parietes may now be either cut open or rendered transparent with the aid of resins, so that the internal structure can be examined. Another method of preparation, somewhat less advantageous, is to open the auricles, ventricles, and blood-vessels, then fill them up with cotton, or to leave them unopened, but to fill them with proof spirit, afterwards suspending them in the same medium. The water contained in the heart's tissue is attracted by the spirit; the walls thus become stiffened, and retain their form even after the alcohol has been removed. Preparations of this kind are to be met with in Hunter's museum.

On examining a heart thus prepared, the first observation we make is that the left auricle forms an oblong pouch, having almost a horizontal position, its right extremity encroaching upon the domain of the right auricle, the situation of which is nearly vertical. At the point where the two pouches meet, the septum of the auricles develops itself with its inferior portion almost lying across the mouth of the vena cava. This is the exact spot which in the fœtus is occupied by the foramen ovale and its border, and the partition itself consists of the thickened valve, by the adhesion of which with the neighbouring parts the foramen ovale was closed up. The upper part of the septum forms the imperfect septum auricularum in the fœtus. If the auricle be opened, the left being filled up, we discover a protuberance presented by the upper part of the border of the obliterated valve. This, together with the convexity formed above it by the septum, probably constitutes the tubercle mentioned by Lower.

The arrangement of the septum in its different parts has the greatest influence over the functions of the heart under the various circumstances of life. If the body be at rest, the blood flows gently from the lower parts into the right auricle, but if it be pumped up by hard breathing, as in those affected with dyspnœa, the influx becomes far more hurried. It is still more accelerated by an uninterrupted exercise of the muscles of the lower extremities, as the muscles then press on the parietes of the large veins, and thus force the blood onwards towards the auricle, whilst its retrogression is prevented by the valves. The curvature of the septum, the tendency of the circular muscles around the foramen ovale, and the curvatures at the entrance of the venæ cavæ, prevent the blood from penetrating from the inferior into the superior venæ cavæ, or vice versâ. If it were otherwise, apoplexy would easily occur in the former instance, and injurious effects on the liver in the second.—*B. and F. Med. Rev.* April, 1837, from *Kgl. Wetensk. Acad. Handlinger*, 1835.

5. *Apparent Hermaphroditism. Sexual connexion through the canal of the urethra.*—At a recent meeting of the Royal Academy of Medicine of France, M. BALLY presented, for the inspection of the members, a young German, affected with a curious organization of the sexual parts, causing the individual to have been regarded, for several years, as a female, though in reality a male. The scrotum of this young person exhibits a deep furrow along the median line, which gives the part a good deal of the appearance of the labia majora in the female, the substance of each labium, or rather demi-scrotum, contains a hard, oval body, well developed (the *testicle*). At the superior commissure of the furrow we observe an elongated body, about an inch and a half in length, resembling a large clitoris, and capable of erection—this is a portion of the root of the penis. Beneath the rudimentary penis we find an opening leading into a canal that easily received the finger; this canal is prolonged upwards towards the bladder, and offers some resemblance to a vagina; when a catheter is introduced through the opening, it penetrates into the bladder. The person, also, affirms that the urine naturally flows through the same orifice. The canal, then, is nothing else than an urethra, enormously distended during the act of copulation, to which this individual has voluntarily submitted himself for several years, on the supposition that he was a female. In fact, the general appearance is completely feminine. He was baptized and brought up as a female; presents no trace of beard; his form is delicate and agreeable; his voice soft, &c.

The individual acknowledges having accorded his favours to various persons of the male sex, whose embraces he sought with avidity. The effect of the first

connexions which he had, was to force in the membrane surrounding the orifice of the urethra, and thus form a *cul de sac*, or funnel-shaped depression. At length the orifice of the canal was opened by the introduction of a small penis, and gradually the canal itself assumed its present dimensions, viz., those of a small vagina. He further affirmed that during the act of copulation, the rudimentary organ enters into a state of erection, and that the friction produces a perfect ejaculation of the seminal fluid. Up to the age of twenty years, he considered himself, as we have mentioned, to be a girl. At about that time, however, an inguinal hernia, with which he was affected, becoming strangulated, the genital organs were examined by a surgeon, and his true sex discovered. This was followed by a certain revolution in his feelings, the petticoat was immediately thrown aside with disdain, and the newly-baptized man would fain have a mistress, but here nature refused all assistance. His attempt at active copulation was all vain, and he was obliged, much against his pride, to return to his old habits and former acquaintances. It is a fact, worthy of remark, that the testicles had remained concealed in the abdomen up to the period of his being operated on for the hernia. This, doubtless, contributed a great deal to the error of sex.—*Gazette des Hôpitaux*, No. 11.

GENERAL ANATOMY AND PHYSIOLOGY.

6. *Ciliary Motions in Man*.—In our preceding number, (p. 196,) we gave an account of the discovery, by Purkinje, of ciliary motions in the cavities of the brain, and of the observations of Valentin on the same subject. Dr. C. T. VON SIEBOLD, we learn from an article in a recent number of our esteemed cotemporary the *British and Foreign Medical Review*, has continued the investigations of the experimentors just named, and has added some facts which he has noticed, respecting the existence of the vibrating cilia upon the mucous membranes in man. He found these cilia upon the whole surface of a nasal polypus, one hour after its removal from an adult. The length of these ciliæ was 0.0028 and 0.0022 of an English line. The motions of the cilia upon one polypus which was examined, were found to be quite regular in their rhythm: in some parts they moved backwards and forwards 300 times, in others 320 times, in others 190 times, in a minute. The movements were always in the same direction; and, when once they ceased, were never resumed. By a very accurate examination, M. Siebold says that he has ascertained that each cilium curves its free extremity towards the part to which it moves, and that small globules of mucus, when in the vicinity of this oscillating body, are thus propelled in the same direction as the curve of the cilia. On condylomata at the entrance of the vagina no cilia could be discovered. They were also not found on the bronchial mucous membranes of those who had died of pneumonia, or of those who had suffered before death from a copious bronchial mucous secretion. In warm weather, also, it is useless to look in the human corpse for the cilia upon mucous membranes. M. Siebold has examined other membranes without finding any cilia; e. g. synovial membranes, sheaths of tendons, the internal surface of arteries and veins, that also of the vessels of the placenta, as well as serous membranes in animals the mucous membrane of whose bronchial apparatus presented an abundance of cilia. M. Siebold recommends all those who are anxious to examine this phenomenon to first experiment upon bivalves, (*Unio pictorum*, *Anodonta anatina*, *Cyclas cornea*;) for in them the cilia are most evident and their motions most easily recognised, abounding as they do upon their gills, tentacula, intestinal canal, &c. Having once witnessed the structure in these animals, it will be readily ascertained in man and other animals.—*Medicinische Zeitung*, No. 28, 1836.

7. *Period during which divers can stay under water*.—The *Magazine of Natural History*, for December last, contains an interesting article on this subject by Dr. LEFEVRE, a French navy surgeon. Very extraordinary statements have been long current, as to the length of time that divers can remain submerged, and their falsity seems now to be established by the careful observations of Dr. Lefebvre. When stationed in the roads of Navarin, Dr. L. noted on three occasions, the pe-

riods of time which some of the best of the Greek divers, who have been long celebrated for their expertness, remained under water. These divers from their youth, are accustomed to dive and remain a long time under water. Dr. F. has seen them bring cannons and anchors; and tear the sheets of copper from wrecks lying at the depth of 100 and 120 feet. At a like depth they will penetrate into the interior of sunken vessels and bring away articles of a small size.

Dr. F. noted down at three successive times in the course of the year 1829, the period during which these divers remained under water. The articles for which they went lay at the depth of 100 feet, and the temperature of the external air was 24° R. The following are the results of his observations:

1st series.		2nd series.		3d series.	
1st diver	. . 86"	1st diver	. . 65"	1st diver	. . 50"
2	" . . 69"	2	" . . 74"	2	" . . 65"
3	" . . 86"	3	" . . 90"	3	" . . 95"
4	" . . 94"	4	" . . 98"	4	" . . 90"
		5	" . . 84"	5	" . . 60"

Thus the largest period during which the most expert diver could remain under water was but little more than one minute and a half.

8. *Functions of the 5th, 6th and 7th pairs of nerves.*—The *Revue Médicale*, for April, 1836, contains an interesting case of paralysis of the face, communicated by Dr. L. TANQUEREL DESPLANCHES, illustrative of the functions of the 5th, 6th and 7th pairs of cerebral nerves, and confirming the prevalent opinion, that the 5th presides over the sensibility, and the seventh over the mobility, of the face. The author says, he has seen eight cases of the same affection in which the anatomical lesions illustrate the same fact. In the case just alluded to there was paralysis of the external rectus muscle of the eye, caused by pressure upon the 6th pair of nerves by the ophthalmic vein, which was extremely dilated.

9. *Superfætation.*—An instance of this has been recorded by Dr. MOEBUS, of Dieburg, in *Zeitschrift per die Staatsarzneikunde*, for 1836. A female, æt. 35, married since 11 years and the mother of four children, on the 16th Oct. 1833, was delivered of a female infant, fully developed; and on the 18th Nov. following, thirty-three days subsequently, gave birth to a second daughter, also fully developed but feeble.

10. *On the Function of the Medulla Oblongata and Medulla Spinalis, and on the Excito-motory System of Nerves.*—Dr. MARSHALL HALL communicated to the Royal Society, at their meeting on the 2nd of March last, a memoir on this subject, the object of which is to unfold what he calls a great principle in physiology; namely, that of the special function, and the physiological and pathological action and reactions of the true spinal marrow, and of the excito-motory nerves. The two experiments which he regards as affording the type of those physiological phenomena and pathological conditions, which are the direct effects of causes acting in the spinal marrow, or in the course of the motor nerves, are the following:—1. If a muscular nerve be stimulated, either mechanically by the forceps, or by means of galvanism passed transversely across its fibres, the muscle or muscles to which it is distributed are excited to contract.—2. The same result is obtained when the spinal marrow itself is subjected to the agency of a mechanical or galvanic stimulus. The following experiment, on the other hand, presents the type of all the actions of the reflex function of the spinal marrow, and of the excito-motory system of nerves, and of an exclusive series of physiological and pathological phenomena:—If in a turtle, from which the head and sternum have been removed, we lay bare the sixth or seventh intercostal nerve, and stimulate it either by means of the forceps or galvanism, both the anterior and posterior fins, with the tail, are immediately moved with energy. Hence the author infers the existence: 1st, of a true spinal marrow, physiologically distinct from the chord of intra-spinal nerves; 2ndly, of a system of excito-motory nerves, physiologically distinct from the sentient and voluntary nerves; and, 3dly, of currents of nervous influence, incident, upwards, downwards, and reflex with regard to the spinal marrow.

The author illustrates his peculiar views by several experiments and pathological observations, which appear to him to show that muscular movements may occur, under circumstances implying the cessation of sensation, volition, and every

other function of the brain; and that these phenomena are explicable only on the hypothesis that impressions made on a certain set of nerves, which he terms *excito-motory*, are conveyed to a particular portion of the spinal marrow belonging to that system, and are thence reflected, by means of certain motor nerves, upon certain sets of muscles, inducing certain actions. The same actions may also be the result of impressions made directly either on the spinal marrow or on the motor nerves. He accordingly considers that the whole nervous system may be divided into,—1st, the *cerebral*, or the sentient and voluntary; 2ndly, the *true spinal*, or the excitor and motor; and, 3dly, the *ganglionic*, or the nutrient, the secretory, &c. The excito-motory system presides over ingestion and exclusion, retention and egestion, and over the orifices and sphincters of the animal frame: it is therefore the nervous system of respiration, deglutition, &c., and the source of tone in the whole muscular system. The true spinal system is the seat or nervous agent of the appetites and passions, but is also susceptible of modification by volition. This theory he proceeds to apply to the explanation of several phenomena relating to the motions of the eye-lids, pharynx, cardia, larynx, muscles of inspiration, sphincter ani, expulsors of the feces and semen, to the tone of the muscular system generally, and to actions resulting from the passions. Lastly, he considers its application to various diseased states of the same functions, as manifested in cynic spasm, vomiting, asthma, tenesmus, strangury, crowing inspiration, convulsions, epilepsy, tetanus, hydrophobia, and paralysis.—*Proceedings of the Royal Society*, for 1836.

11. *On the Safety-valve of the right Ventricle of the Heart*.—THOMAS BELL, ESQ. in a memoir some time since presented to the Royal Society, endeavours to demonstrate that the tricuspid valve in man occasionally serves the purpose of a safety-valve, being constructed so as to allow of the reflux of the blood from the ventricle into the auricle, during the varying states of distension to which the right cavities of the heart are at times subjected; that a similar function is maintained in the greater number of animals possessing a double circulation, and also that in the different orders of these animals the structure of this valve is expressly adapted to the production of an effect of this kind, in various degrees, corresponding with the respective characters and habits of each tribe.

The force with which the circulating blood is impelled by the general venous trunks into the heart, and which is dependent on the action of the arterial system, the degree of compression arising from muscular action, combined with the resistance of the valves of the veins, and is also influenced by occasional accumulations of blood from rapid absorption, from impeded respiration, and from cold applied to the surface of the body, is shown to be subject to great and sudden variations. Any increase taking place in this force tends to produce distension of the right ventricle of the heart, followed by disturbance in the valvular action of the tricuspid membrane, owing to the displacement of its parts, which thus allows of a considerable reflux of blood into the auricle.—*Ibid*.

12. *On the Brain of the Negro compared with that of the European and the Ourang-Outang*.—It has long been the prevailing opinion among naturalists that the Negro race is inferior, both in organization and in intellectual powers, to the European; and that, in all the points of difference, it exhibits an approach to the monkey tribes. The object of the present paper is to institute a rigid inquiry into the validity of this opinion. The author has, for this purpose, examined an immense number of brains of persons of different sexes, of various ages, and belonging to different varieties of the human race, both by ascertaining their exact weight, and also by accurate measurement of the capacity of the cavity of the cranium; and has arrived at the following conclusions. The weight of the brain of an adult male European varies from 3lbs. 3oz. to 4lbs. 11oz. troy weight: that of the female weighs, on an average, from 4 to 8oz. less than that of the male. The brain usually attains its full dimensions at the age of seven or eight; and decreases in size in old age. At the time of birth, the brain bears a larger proportion to the size of the body than at any subsequent period of life, being then as one sixth of the total weight; at two years of age it is one fourteenth; at three, one eighteenth; at fifteen, one twenty-fourth; and in the adult period, that is, from the age of twenty to that of seventy, it is generally within the limits of one

thirty-fifth and one forty-fifth. In the case of adults, however, this proportion is much regulated by the condition of the body as to corpulence; being in thin persons from one twenty-second to one twenty-seventh, and in fat persons often only one fiftieth, or even one hundredth of the total weight of the body. The brain has been found to be particularly large in some individuals possessed of extraordinary mental capacity. No perceptible difference exists either in the average weight or the average size of the brain of the Negro and of the European: and the nerves are not larger, relatively to the size of the brain, in the former than in the latter. In the external form of the brain of the Negro a very slight difference only can be traced from that of the European; but there is absolutely no difference whatsoever in its internal structure, nor does the Negro brain exhibit any greater resemblance to that of the ourang-outang than the brain of the European, excepting, perhaps, in the more symmetrical disposition of its convolutions.

Many of the results which the author has thus deduced from his researches are at variance with the received opinions relative to the presumed inferiority of the Negro structure, both in the conformation and relative dimensions of the brain; and he ascribes the erroneous notions which have been hitherto entertained on these subjects chiefly to prejudice created by the circumstance that the facial angle in the Negro is smaller than in the European, and consequently makes, in this respect, an approach to that of the ape, in which it is still farther diminished. The author denies that there is any innate difference in the intellectual faculties of these two varieties of the human race; and maintains that the apparent inferiority of the Negro is altogether the result of the demoralizing influence of slavery, and of the long-continued oppression and cruelty which have been exercised towards this unhappy portion of mankind by their more early civilized, and consequently more successful competitors for the dominion of the world.—*Ibid.*

PATHOLOGICAL ANATOMY AND GENERAL PATHOLOGY.

13. *Cancer and Perforation of the Stomach, with rupture of an abscess in the left hypochondrium.*—This case, which we believe to be unique, is recorded by Dr. H. C. LOMBARD of Geneva, in the *Gazette Médicale de Paris* of the 10th December last. The subject of it was a labourer, 44 years of age, of robust constitution, and remarkably muscular, who had been repeatedly admitted into the hospital, sometimes for cramps of the stomach, which occurred very frequently, and were often exceedingly violent; at others, for varicose ulcers of both legs; and what was remarkable, the cramps reappeared as soon as the ulcers commenced to heal, so that he was more than once compelled by the violence of the cramps to renew the ulcers in the legs by walking, a means which always succeeded.

On the 12th of February, eight days after the patient had left the hospital with his varicose ulcers healed, he was seized with violent pain in his abdomen. On his admission that evening into the hospital, he had a natural stool, and urinated abundantly. An hour afterwards Dr. L. found him in the following state:—face pale and contracted; tongue white; no nausea or vomiting; skin cold; extremities cold; abdomen excessively painful on pressure upon the umbilical region; muscles tense, especially in the hypogastric region, which is swollen as if the bladder was much distended; the intellect was unaffected. Bleeding from the arm and fomentations to the abdomen were prescribed.

The next day the patient was worse; there was a very fatiguing hiccup; the pulse was gone; the beating of the heart feeble, tumultuous, not to be counted; the umbilical pain continued; the hypogastric region more prominent and with fluctuation; no stool or evacuation of urine since yesterday. The symptoms increased in intensity and the patient died twenty-two hours after his attack.

Post-mortem. Exterior.—Muscles voluminous and covered a thick layer of fat; in short, the patient had the appearance of having died in the best health.

Thorax.—Lungs, healthy. Heart, large, healthy. Pneumogastric nerves, normal.

Abdomen.—On opening the peritonæum a yellow sero-albuminous fluid, containing albuminous and purulent flocculi, flowed out. The large and small in-

testines were covered with a semi-puriform exudation, which united them together; their exterior surface was bright red, as was also the peritonæum lining the abdominal muscles.

The whole upper left part of the abdomen was occupied by a cavity, circumscribed above by the liver and duodenum; on the right by the liver, the gall bladder, and the duodenum; on the left by the concavity of the false ribs and the superior and lateral portions of the abdominal parietes; below by the anterior surface of the stomach, in which last organ there was a circular perforation with irregular edges, and appearing as if a piece had been taken out by a punch. The debris of food, and the nature of the liquid contained in the cavity, showed the facility with which substances taken into the stomach, passed into this abnormal cavity. The parietes of this cavity were formed by the organs just indicated, but lined by a false membrane of a yellowish colour, and of three or four lines thick; the spleen alone was not covered, and its surface appeared as if macerated in the liquid in which it floated. In the vicinity of the spleen there was a rupture of several inches in extent through which this cavity communicated with the peritonæal cavity.

The mucous membrane of the stomach was mamellonated, greyish, not softened, forming numerous folds, and ulcerated in three places. One of these ulcers was situated an inch from the pylorus at the smaller curvature of the stomach; it was from fifteen to eighteen lines in diameter; its borders were thick and formed by a whitish lardaceous tissue, which presented indurated cellular intersections, crisping (*criant*) under the scalpel, and of fatty lobules transformed into a yellow and resisting substance in some places near the ulceration; the ganglions were soft and reddish. In the centre of this ulceration there was a perforation of from six to seven lines in diameter, with thick, greyish edges, evidently of old date. There were two other ulcerations of less depth and extent, and which were confined to the mucous membrane; one of them appeared to be in progress of cicatrization, if we might judge from the thinness of its edges and the little depth of its base. The mucous membrane of the intestines presented no alteration of colour or consistence; it was remarkably pale in the points corresponding to the highest degree of peritonitis.

Liver, spleen, kidneys, and bladder, natural.

It is difficult to understand how there could exist, for several years, in a person whose muscles were loaded with fat, a perforation of the stomach allowing the passage of the food into a vast peritonæal sac; equally difficult is it to understand how there could exist such extensive disorders in the abdomen, a scirrhus tumour of the stomach, and two other ulcerations of the mucous membrane, in a person whose only complaint was cramps of the stomach and constipation. Nor is it easy to comprehend how the suppuration from varicose ulcers could lessen the pains in the stomach.

14. *On the importance of Percussion in the Diagnosis of Ascites and Encysted Ovarian Dropsy.*—M. ROSTAN considers the signs afforded by percussion of the utmost importance in the diagnosis of ascites and encysted ovarian dropsy, where the diagnosis is difficult. When we strike the belly of a patient labouring under ascites, where the effusion has not gone so far as violently to distend the abdominal parietes, if we proceed from the inferior to the superior part of the abdomen, we shall at first have a flat sound, while, at the most prominent part—that is, about the umbilical or epigastric regions—we shall perceive a clear sound, like to that which we obtain on striking a bladder full of air. In encysted ovarian dropsy the reverse is the case—that is, the sound is clear at the inferior part, and dull at the superior. These differences are produced by the different relations which fluid effused into the peritoneum, and an ovarian cyst, have to the intestines. The dulness which we find at the inferior part of the abdomen in ascites, is the result of the accumulation of the effused fluid, which gravitates to the most dependent part of the peritoneal cavity; and while the collection of fluid augments there, the intestines become displaced—and it is important to know of this displacement, because it is it which accounts for the clear sound in the superior regions. In fact, this sound is the result of the less specific gravity of the gases contained in the intestinal cavity, in virtue of which the intestines are raised upwards, as the fluid on which they float accumulates below. The state of the parts,

in encysted ovarian dropsy, is not at all the same; for in ascites the fluid is freely spread out within the peritoneum, while, in the other case, it is shut up in a more or less resisting bag, which gradually increases in size by the accumulation of serous fluid in its interior, and, as it becomes displaced, presses on the intestines of the side opposite to that on which it develops itself, and at last ends by occupying a greater or smaller space in the abdomen. This case is very different from the first; here the intestine does not float in the accumulated fluid, as it is separated from it by a wall of membrane; and therefore, instead of being raised upwards, it will be kept and pressed against the inferior part of the abdominal parietes; and thus, in this case, we find its dull sound high up, corresponding to the cyst, and its clear one low down, where the intestines are to be found distended with gas. In the generality of cases these signs are sufficient for the practitioner; but they may not be sufficient under certain circumstances which are not common, and which may be reduced to the following:—1st. It may happen, in either case of dropsy, that the intestine is not distended with gas: in that case, the signs which have been just pointed out become useless; but this state is only transitory, as the formation of gas takes place during digestion. In such a case the examination need only be deferred for a few hours. 2nd. We may meet with a case of ascites, in which the walls of the abdomen are so much distended, that the mesentery is not long enough to allow the intestine to float freely in the fluid. In that case you must percuss the patient, making him vary his posture. 3d. We may suppose that a cyst, in its development, occupies a place between the intestines and the posterior wall of the abdomen, and is situated under the mesentery; and that, in augmenting its size, it forces the mesentery along with the intestines towards the superior part of the abdomen. In this case, we must confess, there will be a great source of error, because percussion will give the signs belonging to ascites. It is in cases like these that we feel the importance of not confining ourselves to one sign, but of accurately scrutinizing every symptom that can throw light on the diagnosis.—*La Presse Médicale*.

15. *Case of Otitis terminating fatally*.—Mr. MOORE related to the London Medical Society, at their meeting on the 8th of May last, the following particulars of a case of otitis occurring in a young man, 17 years of age. He also presented a morbid preparation of the first and second cervical vertebræ, which had been obtained at the examination of the body *post-mortem*. The patient complained of acute pain in the ear, which came on suddenly, and was followed by a copious discharge of fœtid pus. This occurrence was preceded some months by deafness and an uneasy sensation in the ear. The muscles of the neck then became rigid, and any jarring noise caused great agony. The appetite was good, and the general strength so little impaired, that he followed his ordinary occupation as a compositor. The pulse was about 90, and feeble. These symptoms led Mr. Moore to suppose the bones and structures at the base of the skull were severely diseased, and he formed an unfavourable prognosis. The degree of relief obtained from the treatment employed was very trifling, and the malady continued to increase. The teeth now became nearly closed and the jaws immoveable; the neck was still more curved, and the spinous process of the second vertebræ inclined considerably towards the right side; crepitus was felt by passing the finger from the first to the second vertebræ. At a late period, pain came on in paroxysms, lasting from half an hour to two or three hours; sleep was obtained only by means of narcotics; hectic fever and emaciation became evident. About six hours before death, general paralysis supervened; he passed involuntarily one motion, and gradually sunk. The respiration was not remarkable; one of the symptoms before death was frequent emissions of semen, attended by priapism without sexual desire. Upon examination, pus was found to issue in abundance from the external meatus by applying pressure on the neck. The petrous and mastoid portions of the temporal bone, parts of the occipital, the first and second vertebræ, were denuded and carious; the membranes of the medulla and spinal canal and cerebellum were adherent; pus was found in the canal which communicated with an abscess externally in the neck.—*British Ann. Med.*, May 12, 1837.

MATERIA MEDICA AND GENERAL THERAPEUTICS.

16. *Tannate of Lead*.—AUTENRIETH has recommended this salt strongly in gangrenous states; it especially was beneficial in the case of a girl affected with a nervous fever, whose back was attacked by deep gangrenous sores: it was applied in the form of ointment. The tannate was obtained by precipitating an infusion of oak bark by acetate of lead. The precipitate was collected on a linen cloth and dried. This is the bitannate which is white. But there are two other tannates: the *neutral tannate*, obtained by boiling the *bitannate* with distilled water; the odd atom of tannic acid is dissolved while the neutral tannate remains; it consists of 65.79 tannic acid and 34.21 oxide of lead. The *basic tannate* is procured by precipitating a solution of tannic acid, or tannate of potash, by disacetate of lead; it is white, but by washing becomes yellowish. Dr. Tott employs the bitannate in the following form:—Dried tannate of lead, 2 drachms; rose ointment, 1 ounce. The ointment is to be intimately mixed, and spread on the sore. —*British Ann. Med.*, June 2, 1837, from *Journ. de Chim. Méd.* March, 1837.

17. *Clinical Researches on the influence of certain Medicines upon the functions of the Heart*. By H. C. LOMBARD.—1. *Assafoetida*. M. L. states this to possess remarkable properties in combating the irregularity of the functions of the heart. Employed *externally*, in the form of plaster, it succeeds in alleviating palpitations which have resisted a great variety of medicines. He has almost constantly obtained some alleviation in a great number of cases. Irregular contractions of the ventricles, occurring in persons affected with disease of the heart, are modified; and it likewise succeeds in those cases which may be considered only nervous. The following is the formula used by him: *Assafoetida*, 2 ounces; gum. ammoniac, 1 scruple; turpentine, 6 drops; yellow wax, a sufficient quantity. Employed *internally*, he has found it likewise lessen and render regular the movements of the heart. In very small doses, it lessens the palpitations, and produces a remarkable calm; and he considers it a very valuable remedy in nearly all diseases of this organ.

2. *Camphor*. This medicine, given internally, in variable doses, from three to twelve grains in the day, acts in a special manner upon the heart. Among persons affected with hypertrophy, with dilatation of the cavities, the nervous influence is often insufficient to produce regular and complete contractions, and hence often tumultuous action. This state he has found can be modified by camphor, and he has seen the most tumultuous ventricular contractions become regular and perfectly isochronous after the administration of a few grains. He is not able to decide whether it acts as a stimulant or a sedative.

3. *Digitalis*. M. Lombard believes the want of uniformity in the sedative action of this medicine upon the functions of the heart, depends upon the four following circumstances: 1. The state of the stomach; 2, the mode of life of the patient; 3, the doses given; 4, the mode of administration. Sometimes, owing to an irritable state of the stomach, the exhibition of *digitalis* induces vomiting; and, if this continues after the cessation of the medicine, we must not have recourse to antiphlogistic measures, but to antispasmodics; such as the subnitrate of bismuth, oxide of zinc, and effervescing draughts. The mode of administering *digitalis* is one of the most important points in its therapeutical history. The infusion is the preparation which produces most promptly symptoms of saturation. In the form of powder it rarely produces vomiting, except when the doses are large and frequently repeated. The best medicines for obviating or allaying these symptoms of saturation are calcined magnesia, subnitrate of bismuth, subcarbonate of iron, or oxide of zinc. M. L. considers the subcarbonate of iron as the best, and thinks he can attribute to its use the absence of baneful results among his patients who took *digitalis* daily for many months.

4. *Polygala Senega*. The therapeutical action of this medicine is little known. M. Lombard considers it one of the most precious which the materia medica possesses. Administered in the form of extract or infusion, he has found it lower the circulation, and especially regulate the ventricular contractions. The dose employed varied between twelve and twenty-four grains in the course of the day. The infusion, prepared with one drachm to four ounces of water, has been often

administered in the same time.—*British and For. Med. Rev.*, from *Bulletin Gen. de Thérap.* Nov., 1836.

18. *Physiological effects of Tannin.*—M. CAVARRA has lately made some experiments on this subject. He administered the tannin in its pure state, to dogs, to the extent of 12 grains, and himself took for three days running three pills, each of $2\frac{1}{2}$ grains. In both cases obstinate constipation was the only effect produced. He killed a dog to whom he had given it, and found the mucous surface of the intestines dry, and the fecal matter hard and collected in the colon, the membrane of which, when examined with a magnifying glass, displayed a remarkable closing of the pores and villi. M. C. has successfully treated with pure tannin six cases of diarrhœa, twenty-three cases of leucorrhœa, and five of pulmonary catarrh, with some cases of hæmoptysis, hemorrhage from the rectum and vagina, and a few of gonorrhœa. He administered it either in the form of pills or of a solution.—*Revue Thérapeutique.*

19. *Therapeutic applications of Indigo.*—This substance was first employed as a therapeutic agent in the treatment of epilepsy, by Lenhossek, and afterwards by Grossheim and others. Its efficacy was afterwards tried by Ideler, a Prussian physician; and among twenty-six patients, in whom indigo was experimentally tried, six individuals recovered completely; three were dismissed cured, who had after intervals of from eight to twelve months a relapse, under the operation of causes which might have induced epilepsy; of eleven patients, the condition underwent an essential improvement; and in six individuals no change took place. At first, the patients were wont frequently, though without effect, to vomit; after some days this ceased, and in its place, there took place diarrhœa, which at first caused from six to eight motions daily, and was occasionally accompanied with moderate colicky pain, but afterwards moved the bowels only two or three times daily, but with fluid motions, and continued so long as the indigo was used, but without impairing the appetite or digestion. The curative reaction of the nervous system upon the agent was principally indicated by this circumstance, that the epileptic symptoms in the first period returned more frequently, and attained a higher degree of intensity, but afterwards became less frequent, milder, and at length entirely disappeared.

Most usually the indigo was exhibited in the form of electuary, with a proportion of the aromatic powder, because, alone, it is very disagreeable to the patient. At first it was administered in the dose of one scruple; this was quickly increased to a drachm and more, so that daily from half an ounce to one ounce might be used for a series of months without difficulty.

In a paper in Graefe and Walther's Journal, entitled Contributions to Casuistics, by D. Moritz Strahl, of Berlin, are some observations on the operation of the same remedy in spasmodic diseases. In the trials made by Dr. Strahl with this agent, in ten cases of inveterate epilepsy, in which it was given in progressively increasing doses, of from one scruple three times a-day, to half an ounce daily for the space of ten weeks, it produced not the smallest effect. During its employment the stools became blue, and the urine assumed a dark green colour. Excepting slight inconvenience of the stomach, no operation of the remedy upon the organism could in general be observed. On the other hand, indigo, in four hysterical females, one of whom was already in the age of decrepitude, evinced the presence of very remarkable phenomena. In all, after about two drachms daily had been taken, violent pain in the region of the kidneys, like colic, took place; the urine assumed a deeper intensity of colouring than in male patients, and at the bottom of the vessel was observed no trifling quantity of fine indigo powder. The intense renal pain continued for four days, and at length subsided under the continued employment of an oily emulsion. In one case only did there ensue a remission of the spasms, and the patient was not entirely well three months after the cure was completed. The operation of the indigo, further, on the womb, was very remarkable, since, in two cases, an amenorrhœa was radically cured, while the spasms were throughout undiminished. In two cases of St. Vitus's dance, in a boy of 12 and a girl of 9 years, the indigo was throughout unavailing.

The different clinical trials made with indigo by Dr. Roth, furnished the fol-

lowing results. In epileptic cases, the remedy evinces almost always the same immediate operation; but its subsequent consequences are regulated by the degree of vitality of the nervous system of the patients, and the kind and duration of the epilepsy. These effects are beneficial in all idiopathic epilepsies, curative in those of this class which have not been of long continuance; and in very chronic idiopathic epilepsies, indigo diminishes the violence and the frequency of the paroxysms. Of symptomatic epilepsies, only a few are alleviated by the use of indigo, none are cured.—*Edinburgh Med. & Surg. Journal*, from *Neue Wissenschaftliche Annalen*.

20. *Physiological operation of Indigo*.—In almost all patients, the use of indigo is succeeded first by squeamishness and vomiting, though the substance itself be tasteless and inodorous. The violence of the emetic efforts appears to be regulated by the individual irritability of the gastric nerves of the patients. Females vomit more readily than males. The vomiting is at first continuous, that is, during the continued use of the agent, and often so violent that the indigo must be given up; but after several days it ceases. It has otherwise the peculiarity that the contraction of the abdominal muscles and the diaphragm is much less violent, and the debility is less considerable than after vomiting induced by other means. The contents of the stomach present nothing unusual, even in respect to taste, only they are of a very dark blue colour, and the fluid is intimately mixed with the indigo, from which it may be inferred that the gastric juice contributes very much to the digestion of the indigo.

Diarrhœa, the second physiological effect of indigo; takes place in general first when the vomiting ceases; yet from this many patients remain altogether exempt. In general, diarrhœa, when once commenced, continues as long as the patients take the indigo, and increases in intensity during the continued use of the remedy. The motions are generally soft, semifluid, and of a dark blue-black colour. The vomiting and diarrhœa are frequently accompanied with slight colicky pains in the stomach and bowels, which, however, may be so violent as to require the indigo to be given up. Those patients who are exempt from vomiting appear to be attacked with more violent colicky symptoms. By the continued diarrhœa there is formed a species of gastrosis (irritation of the mucous membrane of the stomach and bowels,) with loss of appetite, headache, and giddiness, and sometimes the sense of dazzling lights in the eyes.

The third physiological operation of indigo is seen in the urinary secretion. The urine assumes a dark violet colour, deepest in the morning. On the quantity of the urine the agent seems to exercise no influence.

Dr. Roth did not observe coloration of the sweat. But it is remarkable, that one patient, after the use of indigo for several weeks, fell often into slight convulsions, similar to those which ensue on the employment of the nitrate of strychnia.

The dose of indigo is regulated by the irritability of the stomach. It is best to begin with grains, and rise gradually to drachms, or even several ounces daily. Dr. Roth gives the preference to the form of electuary, with proportional additions of the aromatic powder, or Dover's powder, as correctives. In the formula employed in the Hospital of the *Charité*, at Berlin, half an ounce of powdered indigo, rubbed up with a few drops of water, is mixed with half a drachm of aromatic powder, and one ounce of simple syrup, and to be taken in divided doses in the course of the day. Many even take from a half to two ounces, twice and four times daily for the space of several months.

In what manner indigo operates, and to what class of medicines it belongs, is very difficult to determine, and certainly cannot be inferred from its constituent parts. Probably its active principle is seated in the peculiar colouring matter. Though in many respects the operation of indigo is similar to that of tartar emetic, yet this attacks more forcibly the energy of the organism. In all the patients after the use of the indigo the spasms were at first more frequent and more intense, but shorter in duration; but after some weeks their intensity was manifestly abated, and at length they entirely disappeared. All the patients cured by indigo laboured under idiopathic epilepsy, that is, epilepsy without symptoms of organic lesion. Among those who were improved were several idiopathic and symptomatic cases. In one case of epilepsy, which ensued after a remarkable contusion of the head, after the employment of indigo, a moderately long intermission took

place. A boy of 16 years of age, who had laboured for eight years under St. Vitus's dance, and then was attacked with epileptic spasms, was cured of all the symptoms by the use of indigo for six weeks. Of twenty-six epileptic patients treated by means of indigo, there recovered—four males and five females; three males and eight females were improved; and four males and two females remained uncured. In confirmation of the foregoing inferences, the author communicates the history of two cases, in which the treatment by means of indigo operated beneficially, after other means had been found unavailing.—*Ibid.*

21. *On the Sources and Composition of the different kinds of Gamboge.* By Dr. CHRISTISON. *On the Botanical Origin of Gamboge.* By Dr. GRAHAM.—The above are the titles of two interesting papers read before the Royal Society of Edinburgh, March 7, 1836.

Gamboge was first made known by Clusius about the commencement of the seventeenth century, as a concrete juice from China. About the middle of the same century, Bontius conceived he had traced it to a particular species of *Euphorbia*, growing in Java and Siam; from the latter of which countries the whole gamboge of commerce was at that time obtained. About the close of that century Hermann announced that gamboge was produced by two species of trees growing in Ceylon, which have been since often confounded together, but which are now designated by the names *Garcinia*, *Gambogia*, and *Stalagmitis Gambogioides*. About the middle of last century, gamboge was referred by Linnæus to the former of these plants, and his reference was generally admitted. But about thirty years later, Professor Murray of Göttingen conceived he had traced it satisfactorily from the specimens collected by Koenig in Ceylon, and information obtained by the same botanist in Siam, to a new species which he called *Stalagmitis gambogioides*.

Dr. Graham shows, from specimens and drawings sent from Ceylon, both by Mrs. Colonel Walker to himself, and by David Anderson Blair, Esq. to the late Dr. Duncan, that the plant producing Ceylon gamboge is neither *Garcinia gambogia*, as Linnæus thought, nor *Xanthochymus ovalifolius*, as conjectured by Dr. Wight and Mr. Arnott, nor *Stalagmitis gambogioides*, according to Murray and Koenig, but is a species described by Lamarek and Gärtner under the name of *Garcinia* or *Mangostana morella*, although it differs from all these genera in the structure of its stamens, and, therefore, probably ought to be considered a new genus among those producing a gambogoid juice.

Dr. Christison proved, that, at the present time, Ceylon gamboge is not an article of European commerce, and that the whole gamboge of the markets of this country comes, as in the time of Bontius, from China. After mentioning the analysis of fine gamboge made by Braconnot in France and John in Prussia, he stated the following as the mean composition of the several varieties of gamboge he has hitherto examined:—

Pipe gamboge of Siam:

Resin,	-	-	-	-	-	72.2
Arabin,	-	-	-	-	-	23.0
Moisture,	-	-	-	-	-	4.8
						<hr/>
						100.0

Cake gamboge of Siam:

Resin,	-	-	-	-	-	64.8
Arabin,	-	-	-	-	-	20.2
Fecula,	-	-	-	-	-	5.6
Lignin,	-	-	-	-	-	5.3
Moisture,	-	-	-	-	-	4.1
						<hr/>
						100.0

Ceylon gamboge sent by Mrs. Colonel Walker:

Resin,	-	-	-	-	-	70.2
Arabin,	-	-	-	-	-	19.6
Fibre of wood and bark,	-	-	-	-	-	5.6
Moisture,	-	-	-	-	-	4.6

Ceylon gamboge, adhering to a specimen of the bark sent by Mr. David Anderson Blair:

Resin,	-	-	-	-	-	75.5
Arabin,	-	-	-	-	-	18.3
Cerasin,	-	-	-	-	-	0.7
Moisture,	-	-	-	-	-	4.8
						<hr/> 99.3

The proportion of the gum to the resin varied somewhat in each variety, but never differed more than 2 per cent. from the means given above.

The author added, that he had found the resin to be the active principle of gamboge.

He inferred from the composition of the different kinds of gamboge, and other circumstances detailed in his paper, that the cake gamboge of Siam is not entirely a natural production, but a manufactured article: that Ceylon gamboge, if freed from incidental fibrous matter, corresponds almost exactly with Siam gamboge: that, therefore, they are probably produced by the same plant: that Ceylon gamboge possesses precisely the same medicinal properties: and that this variety, if more carefully collected, may, in all probability, be applied with equal advantage to every economical purpose which is at present served by the finest pipe gamboge of Siam.—*Transactions of the Royal Society*, 1836.

SPECIAL PATHOLOGY AND SPECIAL THERAPEUTICS.

22. *Observations on Jaundice; more particularly on that form of the disease which accompanies the diffused inflammation of the substance of the liver.* By RICHARD BRIGHT, M. D.—The causes which generally give rise to jaundice will, perhaps, admit of the following classification:—

1. Congestion of blood in the liver. 2. Obstruction of bile in the biliary ducts, and more particularly in the larger ducts. 3. Chronic change in the structure of the liver. 4. Inflammatory action of the liver.

1. Congestion of blood takes place in the liver under various circumstances, of which the following are the most frequent:—Obstruction to the circulation of the chest, more particularly from valvular diseases, or dilatation of the heart; constipation, pregnancy; and certain conditions of the circulation, connected with remittent and other fevers.

2. Obstruction to the passage of the bile in the larger ducts takes place from biliary concretions; from malignant or other growths in the liver itself; or in glands about Glisson's capsule; from changes in the coats of the ducts themselves; from inflammation of the duodenum; or from induration of the pancreas.

3. The chronic changes in the structure of the liver are of various kinds; sometimes the result of simple inflammatory action of a somewhat acute character, imperfectly subdued; at other times, the result of a very slow and chronic action, affecting either the secreting portion or the cellular tissue;—at others, the result of degeneration, or of malignant action taking place extensively throughout the organ.

4. The inflammatory action of the liver, which chiefly gives rise to jaundice, occurs in its substance, sometimes, if unchecked, going on to suppuration; but at other times producing a gradual change in the texture of the liver.

It is my intention, before bringing forward a few cases to illustrate the fourth class of causes to which I have referred, and which forms the chief object of the present communication, to state briefly some of the more prominent circumstances attending the other three classes; that, to a certain extent, we may have an opportunity of comparing, or of contrasting, their various symptoms, and the morbid changes by which they are marked.

When obstruction takes place to the circulation through the chest, but more particularly when the heart becomes gorged and over-distended with blood, we observe the countenance gradually assume a dingy aspect, in which the purple suffusion of carbonized blood is mingled with the yellow tint of a slight jaundice; the conjunctiva is more decidedly tinged; and if the disease continue long, the jaundice sometimes completely prevails over the purple tint: the urine becomes scanty, and high coloured, throwing down the lateritious sediments; but the dejections are not obviously deficient in bile. In this condition, the primary disease

has occasionally been overlooked; and this error has been confirmed, when, on examination in the right hypochondrium, the liver has been found enlarged, descending three or four inches below the margin of the ribs, and decidedly tender and painful on pressure. In these cases, the obvious embarrassment in the chest, and the peculiar distress and anxiety of countenance, will generally present themselves in conjunction with the faint and dingy colour of the jaundice, as evidence of the original disease; and lead us to seek those stethoscopic signs, which will render still more obvious the nature of the obstructing cause.

Should death occur, it will probably have been preceded by the passage of blood, more or less freely, from the lungs or the intestines; and the examination of the body will demonstrate, that the liver has only partaken, with other organs, in the congested state of the venous system. The liver, under these circumstances, is sometimes found in a simple state of congestion throughout all portions of its tissue, to such a degree, as to give it a general dark colour, and afford an abundant flow of blood when an incision is made; but at other times, when the congestion has been of longer duration, it presents that mottled appearance which has been correctly compared to the section of a nutmeg. In the early stages this appears to be simply a state of sanguineous congestion; but when it has continued long, some more fixed deposit seems to take place, and many of the acini assume a light-yellow colour, and a degree of firmness which is not found in the healthy organ. In connexion with this condition of the liver, the mesenteric veins will be found full of blood; the villous membrane of the intestines pretty generally of a deep-red colour, but varying in different portions; the internal surface of the stomach often suffused, to such a degree, as to suggest the idea that some deleterious substance has been administered; the pancreas of a purple, or a leaden hue; and while thus the abdominal viscera are loaded with venous blood, the lungs are gorged, and blood is effused into them, in the form of apoplectic masses; and, in all probability, a certain quantity of serum, tinged with blood, and slightly coloured with bile, will be discovered in the cavities.

The treatment of this form of jaundice resolves itself in those means which are calculated to relieve the original disease; but much assistance is to be derived from the local abstraction of blood; by cupping from the pit of the stomach; or by the application of leeches to the anus, which more directly unloads the vessels of the abdominal circulation.

The second class of causes upon which jaundice depends includes those cases in which, owing to diseased structure or vitiated secretion, some positive mechanical obstruction takes place, preventing the flow of bile from the larger ducts, and thus retaining it within the substance of the liver. In cases of this kind, we usually have a very vivid colour displayed upon the skin; which takes place either suddenly, or by slower degrees, according to the precise nature of the obstructing cause; and which continues a longer or shorter time, likewise, according to that cause; either ceasing altogether, or continuing till death takes place, at no very distant period; or passing gradually into that dingy green colour which, at first sight, impresses the eye almost like the countenance of the mulatto; and, in that sense, may not unfairly deserve the appellation of black jaundice. Amongst these mechanical causes, the two most frequent are, undoubtedly, biliary concretions, and malignant tubera.

The presence and even the passing of biliary calculi is by no means necessarily accompanied with jaundice; for as long as the cystic duct alone is obstructed, or the hepatic or common duct only partially blocked up, the fixed yellow colour may shew itself, although slight indications of jaundice may be present, and may recur frequently, passing away with surprising rapidity, so that almost daily changes may be observed. But, on the other hand, when the common duct is blocked up, the most brilliant jaundice often takes place, and the same in the more rare cases of the calculus being lodged in the hepatic duct. This colour will occasionally be diffused most suddenly; and when this is the case, if the obstruction be not removed, a fatal result will sometimes speedily follow.

The evidences of biliary concretions, as deduced from the appearance of the jaundice, are therefore by no means determinate and certain; but the pain with which the disease is generally accompanied may be considered one, at least, of the most prominent symptoms which attend the passing of calculi, and assist in throwing light on the cause of jaundice. That pain is of two kinds,—a dull aching pain, which is constant, and an acute agonizing pain, which comes and goes

in paroxysms. The severity of the pain is so extreme as to bring on a state of the greatest exhaustion, and reduce the pulse below the natural standard, both as to strength and frequency, or, still more often, to render it rapid and weak, while the hands and the whole surface are bedewed with a cold perspiration. The urine becomes highly tinged with bile, and the stools of a pale drab colour; but this often varies in the course of the disease. Vomiting, hiccup, and a frequent catching inspiration often accompany this form of disease, and the symptoms are aggravated or diminished as the paroxysms of pain advance or recede. Another very frequent symptom is to be found in the occurrence of rigors at somewhat irregular intervals; but sometimes returning periodically, almost with the exactness of an intermittent. This form of jaundice is very apt to return from time to time, either from the successive passing of calculi which are seldom solitary, or from the ineffectual attempts made to get rid of a large calculus.

Should death occur in this form of jaundice, the cause of the biliary obstruction is generally detected without difficulty, by finding concretions in some of the various forms they assume, blocking up partially, or completely, the passages by which the bile should escape; and very frequently we have an opportunity of explaining peculiarities which have occurred in the course of the disease, by the situation occupied by the calculus. It is by no means necessary that the calculus should be large, for we occasionally find the obstruction to have been complete, though the gall-stone has been of very moderate dimensions; and occasionally the calculus has passed, leaving the duct greatly distended, but still the constitution has not been able to rally from the effects of the disease. The liver, in this form of the disease, is found considerably loaded with bile, and the bile-ducts often distended, sometimes forming pouches in which bile is collected, shewing a long-continued and frequently-returning tendency to obstruction.

The treatment of jaundice, under these circumstances, is to be directed to the removal of the temporary obstruction, and consists of such means as are likely to favour the passage of calculus. Opiates combined with purgatives, warm-bath, and assiduous fomentations, are amongst these means; but besides these, the use of mercurials and antimony are of great importance. The antimony, with a view of relaxing spasms, should be combined with the purgatives, wherever vomiting is not a very prominent and distressing symptom. The use of mercury is much more doubtful, and it ought not to be carried to any great extent; for if the obstruction be very obstinate, we run a great risk of doing mischief by over-stimulating the liver, and shall probably add to the distress under which the patient labours, both by increasing the quantity of bile secreted, when there is means of carrying it off, and likewise by increasing the irritability and diminishing the powers of the system by the action of the remedy. In these cases, then, there is no doubt that injury is not unfrequently done by the administration of mercury; but this is still more liable to be the case in those instances of jaundice from mechanical obstruction, which arise from organic deposits.

The most frequent instances of organic deposit giving rise to jaundice are those in which malignant disease establishes itself in some of the complicated parts which lie in the neighbourhood of Glisson's capsule—the small lobes of the liver, the glandular structures, the pyloric end of the stomach, the substance of the duodenum, or the pancreas.

Where any organic lesion of this kind takes place, the jaundice is generally less sudden in its appearance than in other cases, though I have known apparent exceptions to this rule,—I say apparent, because, in many cases, particularly amongst the poor, disease may have made a gradual but decided progress, without exciting attention, till the change of colour has become very observable, and then it has been supposed to have originated suddenly. It happens much more frequently that the countenance has gradually become suffused with bile, but at length the more decided jaundice has taken place, and this has gone on increasing in intensity for a time, after which the colour has lost its brilliancy, and assumed the dark dusky green hue and squalid appearance, which is one of the worst symptoms. In this form of jaundice the urine becomes loaded with bile, till it assumes a colour deeper than porter, but of a green tint; and the stools are of the lightest drab colour, approaching to white. Now, the patient becomes drowsy, ecchymosis takes place in various parts, blood escapes from different surfaces, the frame emaciates, and a state of exhaustion, succeeded frequently by coma, closes the scene.

Malignant disease may, however, exist in the liver to a very great extent, without producing any marked or decided jaundice; for as long as it develops itself only near the surface, or in such parts as it does not make pressure on any large biliary duct, although slight effusion may result, the decided jaundice will not appear: but, when the malignant growths occupy parts external to the liver, but are so situated as to press upon the hepatic or the common duct, this system shews itself in its greatest intensity.

There are other symptoms, more particularly those connected with the evacuation from the bowels, which accompany the complete retention of the bile—occurring in cases where pressure is made on the common and perhaps the pancreatic duct—to which attention ought to be directed; though, as yet, no certain indications can be drawn from them. I refer to the evacuation of fatty matter, more or less mingled with the fæces. In several cases where the obstruction has been in the pancreas itself, a considerable quantity of that substance has been seen floating, and completely separated from the fæces; of which another instance, besides those I have already published, has lately occurred to me in the hospital. But in most cases of very obstinate jaundice, accompanied by complete obstruction, an unusual quantity of fat has been detected; and my friend, Mr. G. O. Rees, has kindly undertaken several analyses for me, with a view of ascertaining this fact; the result of which may, at some future time, be more fully stated.

The appearances presented by the liver, where organic mechanical obstruction has long existed, are generally those of the most marked accumulation of bile in all the ducts, behind the obstructing cause, whether they be the larger or the smaller, so that, in some cases, the whole liver assumes a deep olive-green colour, or occasionally a still more vivid shade of green; the large ducts within the liver are distended to the size of the finger; the hepatic, cystic, and common ducts are of still greater dimensions; and the gall-bladder, containing several ounces of bile, projects far beyond the margin of the liver; the fundus forming a tumour, which has been perceptible to the touch, during life.

The other appearances are those which belong to the disease producing the obstruction, and to the effects of the jaundice on different organs. Amongst the former are tubera of various characters, but generally of hard and solid consistence, or softening towards their centre; enlarged and hardened glands; or a scirrhus state of the pancreas; and frequently a complete and permanent closing of the common ducts.

The treatment in these cases is necessarily little more than palliative. As long as the symptoms have not fully convinced us of the nature of the disease, we may be induced to employ mercurials cautiously; but where the disease is confirmed, mercury can be of little or no utility, and will generally be productive of very injurious consequences: it ought, therefore, to be avoided, except in the form of an occasional purgative, and whatever can allay irritation, support the tone of the stomach, and supply gentle nourishment to the system, will afford the best means of prolonging life, and diminishing the suffering of the patient. What power iodine, in any of its forms, may be capable of exerting over deposits of this kind, or how far it may be able to check the progress of their formation, is at present not sufficiently ascertained.

The third class of causes includes various chronic changes in the structure of the liver; and in these, many of the symptoms present a marked difference, when compared with those of the two foregoing classes. The colour of the skin seldom partakes either of the purple tinge which attends thoracic obstruction, or of the deep yellow, or the dingy green, which are so frequently observed in cases of mechanical closing or obliteration of the life-ducts. The change from the natural colour is usually gradual and inconstant; and the yellow tinge of the conjunctiva often precedes, for some weeks, any more decided indication. In time, however, the bronzed appearance of the forehead, or the darkened areola of the eye, bespeak the approaching change; and a jaundice, bearing the lighter tints, from a sallow suffusion to a fainter or more decided lemon hue—still, however, liable to considerable fluctuation—establishes itself over the whole body.

The urine is usually scanty, and pretty deeply coloured with bile, frequently depositing the pink sediments in abundance. The alvine evacuations seldom present that marked deficiency of bile which in some other cases is observable: on the contrary, they vary through the different shades of brown and yellow; and

are often remarkable, rather for the unequal manner in which the bile is mingled, than for the absence of that secretion. The action of the bowels is generally irregular; and as the disease advances, evacuations of blood frequently take place. Ascites and anasarca usually follow quickly in the train of these diseases.

The more frequent cause which excites this form of jaundice is the excessive use of stimulating food and drink; inducing long-continued or frequently-repeated over-action of the liver, rarely amounting to an appreciable state of inflammation. It likewise arises as a sequel to more decided and even inflammatory attacks; and is sometimes the result of the diffused scirrhus propagating itself through the organ.

The appearances presented after death vary greatly; but, as regards the liver, are all, more or less, indicative of long-continued morbid action. The liver is sometimes increased in its size; but very frequently quite the contrary, the organ having evidently undergone contraction in the progress of the disease: indeed I have, in some cases, most distinctly traced its enlargement in the beginning of the attack, and its gradual diminution towards the more-confirmed stages of disorganization. Though the larger ducts are pervious, and a certain quantity of imperfect bile is found in the gall-bladder, yet the whole substance of the liver is frequently tinged by the bile retained within its smaller ducts. A general granular appearance exists throughout the liver, as if the acini were drawn into masses, surrounded by thickened cellular membrane: and if, without being injected, a portion of liver in this state is macerated in water for several weeks, the little granules assume the appearance of adipocire; and may be easily washed out by a stream of water, leaving a fine tissue of vessels and cellular membrane floating in the water. When the disease has gone further, the bands of cellular membrane are seen intersecting the structure, and forming more decided septa between the masses of acini. These are, the more common appearances, where, from frequent over-stimulation, gradual change in the structure of the liver has given rise to jaundice. Of some of the appearances produced by malignant deposits distributed generally throughout the organ, I shall take another opportunity of speaking.

Besides the changes in the liver, a great many others, affecting the organs of the abdomen and the peritoneum, might be mentioned; but that which is most frequent is the disease and ulceration of the lining membrane of the colon, which very generally occurs where the structure of the liver has gone into chronic degeneration; and in no case more frequently, than when the true fatty degeneration, which is seldom accompanied by jaundice, has taken place.

The treatment in this third class of jaundice is rather by the cautious adaptation of food, the avoiding of stimulus, and the long-continued employment of such medicines as restore and keep up the moderate action of the system, than by any powerful remedies. Much may be done in the early stages, if the patient will submit to regimen: but when serous effusions have taken place, and other symptoms of advanced disease have shewn themselves, little but temporary relief can be expected.

It will, however, I think, be found, that one of the most common causes of jaundice is what I have assumed as a fourth cause—a state of inflammatory action more or less generally pervading the substance of the liver; and it is highly probable, that in different cases different constituent portions of its intimate structure become more affected than the rest: but this is a point which requires stricter investigation than has hitherto been bestowed upon it. I consider this inflammatory state, in many respects, different from that very chronic action of which I have lately been speaking, and which may rather be called a state of long-continued irritation, than a state of inflammation. The causes from which it arises are frequently very different, and, besides irregularities of diet, include atmospheric exposure, the effects of external violence and injuries, the irritating effects of biliary concretions and of the retained bile, and perhaps the stimulating action of mercury. The symptoms likewise differ in many respects from those of the other forms, though not separated by sharp and abrupt lines of demarcation; and the changes produced on the substance of the liver are decidedly different, affecting much more generally the secreting portion than the connecting cellular tissue, and probably involving the branches of the portal vein in preference to other parts.

The progress of inflammation, in these cases, varies so greatly in its intensity and in its rapidity, as to allow of a division being made into the more and less acute forms. It frequently comes on very insidiously, with symptoms and feelings of general constitutional derangement, depression of spirits, slow pulse, oppressed breathing, wandering abdominal pains, constipated bowels, and sometimes sickness of the stomach. In a day or two, the conjunctiva becomes tinged; and in a few days more, there is universal bright bilious suffusion of the skin. It is now found that the pulse is either accelerated, or sometimes still oppressed; and frequently, on pretty severe pressure about the region of the liver, some degree of tenderness is manifested; while in other cases, pressure produces little or no immediate suffering, but the pain comes on gradually a short time after the pressure has been made, and continues for hours or days. Cases of the less acute kind generally yield readily to treatment, if it be adopted early; and they form a large proportion of the cases of simple jaundice which present themselves in practice. In other cases, the inflammatory action is attended with much more severe symptoms, with considerable pyrexia, quick pulse, flushed countenance, and dry tongue, while a jaundice of the most intense colour is diffused over the whole surface. The stools are, both in the more and less acute cases, of a light colour; but less decidedly so, and subject to greater variations than when the obstruction is mechanical; and occasionally, after a few days, give little evidence of deficiency of bile. The urine is deeply tinged. When the disease assumes its more active and febrile form, those symptoms referable to the brain and nervous system, and which appear to depend upon the deleterious effects of bile circulating in the blood, are more intensely marked than in any other form of jaundice; and the tendency to hemorrhage sometimes comes on very early, and is excessive. In some cases, rigors, which assume the form of irregular intermittent paroxysms, form a prominent feature, as the disease advances; and then it often happens, though not always, that suppuration is established; and this may be going on to a great extent, while still the jaundice has rather decreased, or varied exceedingly in its intensity.

In cases of jaundice from inflammatory action, the condition of the liver after death differs according to the period at which the disease has proved fatal; but, in general, the size of the organ is not materially increased; though, on the contrary, it is not unfrequently perceptibly diminished. There is no accumulation of bile in the minute ducts, and the yellow tinge which pervades certain portions of the structure is scarcely more than other structures of the body have obtained from the bilious impregnation with which the blood is loaded, and bears no analogy to the dark green of the liver, loaded with bile from obstruction in the large ducts. On examining the gall-bladder, it is found to contain little bile, and sometimes scarcely a trace of that fluid is to be discovered colouring the mucus accumulated by the secretion of its lining membrane.

When the disease has terminated early in its course, the whole liver seems rather soft and flaccid; the surface appears variegated, of a light-yellow, and dark-red or purple, in patches; and certain portions project above the rest, which, when cut through, sometimes prove of a softer texture, and even to be undergoing a process of change or disorganization; and portions of the same kind are intermixed throughout the whole substance of the liver; while, at other times, the yellow portions are harder than the surrounding substance.

If the disease has not proved fatal at the early period, and while the jaundice is in its brilliant and intense form, but has gone on for some weeks, till the skin has assumed the light lemon-colour tint which often bespeaks a very general disorganization of the liver, we find the structure extensively altered, and a great many of the acini apparently altogether incapable of receiving such a quantity of blood as is necessary for the secretion of the bile, or for giving the healthy colour to the organ. They are then of a whitish-yellow colour, and rather hard and contracted than enlarged; and these altered acini are seen in groups and clusters, which, on careful examination, will generally be found to follow the course of the divisions of the portal vessels, so as to be disposed around them like a sheath, which sometimes extends to the thickness of a quarter of an inch.

There is still another condition of the liver, apparently resulting from this diffused inflammation of its substance, and which occurs when the stage of suppuration has become gradually developed; we then find the liver pervaded by a multiplicity of abscesses, all of which seem tending to discharge themselves into

branches of the portal vein, which then assumes a most unhealthy suppurative appearance along large portions of its course.

With regard to *treatment*, in cases where jaundice depends upon inflammatory action, it must always be decided antiphlogistic; but it is only where it presents itself under the more violent forms, that general bleeding need be employed. In other cases, cupping from the margin of the ribs, and (as soon as the bleeding is stopped) the assiduous application of poultices over the liver, will be most important remedies. The combination of calomel, antimony, and opium, must be occasionally administered; and antimonials must be combined with the purgatives, which, in the form of pills, should be given to act regularly on the bowels, and should be aided occasionally by the sulphate of magnesia and other saline purgatives; and, in many cases, the saline purgatives, alternated occasionally with mercurials, are sufficient to cure the disease. A free and uninterrupted action from the skin is most desirable; and to promote this more effectually, the warm-bath may be very advantageously employed; and the poultice, while it restrains the patient in bed, assists forcibly as a diaphoretic measure.

Under treatment of this kind, a very large proportion of cases are completely cured; and where the result is otherwise, it generally arises from some complication of diseases; most frequently from previous disorganization of the liver, or from neglect, on the part of the patient, in not applying for medical aid, or in not steadily pursuing the plan laid down, for it is not uncommon to find persons inclined to make light of an attack of jaundice, if the pain or inconvenience attending is not such as to prevent them altogether from pursuing their usual occupations. Nothing, however, can be more injudicious; and it is the duty of the practitioner to impress this upon his patient; for it can never be a matter of slight importance that either obstruction or inflammatory action should exist in the intimate structure of a secreting organ, and still less in an organ so delicately complex as the liver; and there is no reason to doubt, that although, even without treatment, an attack of this kind may pass off, the liver will be some time before it has completely recovered; and thus a tendency to relapse, or to a renewal of the complaint, may occasionally be observed, shewing itself at longer or shorter intervals throughout life, and terminating at length in the destruction of all the powers of the stomach, the ulceration of the colon, miserable emaciation, or universal dropsy.—*Guy's Hospital Reports*, No. III.

23. *Cerebral Apoplexy of New-born Infants.* By EVORY KENNEDY, M. D., Master of the Dublin Lying-in Hospital.—The apoplectic attack in new-born infants may be a simple primary affection, exhibiting, as we see in the following case, all the symptoms of an apoplectic seizure, as observed in the adult.

CASE I.—*Primary or Simple Apoplexy.* October 14th.—The child of C. W. enjoyed perfect health up to the sixth day from birth, when it refused the breast, and suddenly fell into a state of stupor, with laboured stertorous breathing. The pulse 60; face tumid and livid; bowels, &c. perfectly natural. One leech was immediately applied over the fontanelle, and another at the lower part of occiput; the spine was rubbed with volatile liniment, and the body immersed in a warm-bath, whilst the head was kept cool. The respiration became natural, and pulse rose to 120; shortly after the leeches fell off.

15th. Much better, in every respect; its sensibilities are sufficiently acute; but still cannot suck, not grasping or holding the nipple when introduced into the mouth. To be supplied with breast milk and a small quantity of wine whey through the day. This child continued improving, and was quite well on the 16th.

This case may be looked on in every respect as one of simple apoplexy; and it may be fairly inferred, that the train of symptoms depended upon mere congestion.

Apoplexy may be combined with inordinate or spastic action of the muscles of the face, trunk, or extremities, more or less complete or partial, a striking instance of which we have in the following case.

CASE II.—*Apoplexy combined with Tonic Spasm.* This child exhibited a tumour on the occiput, the effect of a twenty-nine hours' pressure in labour. A few hours after its birth it became insensible, its respiration laboured, and the muscles of the neck and lower extremities were spastically fixed, producing complete opis-

thotonos. The mæconium had been freely evacuated by castor oil; a leech was applied to the fontanelle, and two to the spine, and the child placed in the warm-bath; calomel exhibited in small and repeated doses, the spine rubbed with volatile liniment, and a turpentine injection administered. The sensibility gradually returned, the spasm subsided, and the child recovered.

The cerebral symptoms in the child are, in a large proportion of cases, merely secondary, and symptomatic of disease, or obstructed function in remote organs, as the annexed cases will illustrate.

CASE III.—Secondary Apoplexy. The child of B. C., a boy, had been suffering from its birth under biliary derangement, attended with yellow discoloration of skin, dark, unhealthy evacuations, and abdominal uneasiness, particularly in region of liver, for which he had been treated with mercury, purgatives, and turpentine enemata, the bowels acting freely. On the fifth day he fell into a state of stupor, attended with slow laboured respiration and suffused countenance; pulse eighty; pupils contracted and insensible. After lying in this state for about six hours, a fit of general convulsions ensued, when a leech was applied to the back of the head, and the spine and abdomen were rubbed with stimulating liniment; under this treatment he amended immediately, and left the hospital perfectly well on the eighth day.

This appeared to be a case of secondary cerebral disease, the apoplexy being consequent upon the biliary derangement. It was not, however, the less serious in its nature, from this circumstance, and required the same treatment to remove it as if it had been the original morbid state.

CASE IV.—Apoplexy from obstructed Respiration. A male child, seven days old, was found lying on his face, in which position he had been for some time, his mother thinking he was asleep. When taken up, he was in a state of stupor, countenance livid, respiration irregular; each inspiration was performed with a convulsive motion, the expiration was tardy and prolonged; heart beating slowly and faintly. Frictions, stimulating applications, ammonia, &c. were had recourse to, and after a short time respiration became gradually more frequent and regular, though still convulsive. A fœtid enema with turpentine was thrown up. He now seemed much improved, the countenance becoming less livid, and he cried frequently. In an hour after, the respiration was observed again irregular and laboured; a similar mode of treatment was adopted, but not with the same success; dilute wine whey was administered by the mouth and rectum, with but partial good effect, as he never completely rallied, and he died in six hours.

Post-mortem Examination, sixteen hours after Death.—Body stiffened, lips livid, there was not much blood in the vessels or scalp, but on raising the bones a considerable quantity escaped. The veins on the surface of the brain were turgid, there was some transparent subarachnoid effusion. On making a section of the brain, a marked oozing of dark blood was observed on the incised surface, increased by making pressure. There was about half an ounce of fluid in the ventricles. The cerebellum presented a similarly congested appearance. The veins of the spinal marrow were also turgid. The lungs did not crepitate freely under the finger, and when cut into a quantity of black blood was poured out. The larynx was filled with reddish mucus. There was a small quantity of serum in the pericardium. The right side of the heart was filled with blood in a coagulated state; abdomen healthy.

CASE V.—Apoplexy from Interference with the Functions of the Thoracic Viscera. The child of M. F. was large but weakly on birth, when it was immersed in a warm-bath and the respiration established. In the course of four hours, however, it fell into a state of stupor, at first apparently sleeping, but at length it could not be roused; the surface of the body and nails becoming blue. The heart's action was not to be detected at the left side, but was perceptible at the right. It gradually became comatose, in which state it continued for some hours, and expired.

Post-mortem Examination.—On opening the thorax, the entire of the abdominal viscera, except the liver and right kidney, were found in the left thoracic cavity, having passed through an enlarged œsophageal opening. The heart and lungs were contained in the right thoracic cavity. The vessels of the brain and membranes were generally much congested, and there was a considerable quantity of serous fluid effused between the arachnoid and pia mater.

Even in those cases where the symptoms present leave us no reason to doubt that the cerebro-spinal system is markedly engaged, we rarely find lesions of the same nature, or to the same extent, in the new-born infant as in the adult, who exhibits a corresponding train of symptoms. Thus we have never met with blood effused into the corpus striatum or optic thalamus in the apoplexy of new-born infants. Where extravasation does occur, it is generally at the base or surface of the brain, and proves immediately fatal. In the majority even of fatal cases of this disease, the morbid appearances observed are merely turgescence of the veins and sinuses, with sanguineous oozing from the structure of the organ itself, and perhaps serous effusion underneath the arachnoid, at the base of the skull, in the ventricles or spinal cord. Little can be said on the treatment of these cases, further than that the success attending them will be found to depend upon combating the cerebral symptoms promptly, whether they constitute the original disease, or merely occur as consequent upon other morbid states.

Depletion to the extent practised would by some be objected to, whilst others would esteem it as not carried far enough to afford the necessary relief. This discrepancy to us appears (problematic as it may seem) to establish the accuracy of the plan adopted. It cannot be doubted that the objection of many practitioners to depletion, in these and similar cases, has arisen from its having been carried too far,* and been used too indiscriminately. A new-born infant will bear the application of one or two leeches with the happiest effect, in cases of congestion or inflammation, when three or four would prove fatal from the debility induced. In some cases the application of two leeches or even of one, is attended with palor of the countenance, quick pulse, and exhaustion almost approaching to syncope, and requiring the administration of stimulants, as wine whey, to restore the natural tone and energy of the vital powers.

Leeching is both the safest, easiest, and most effectual means of abstracting blood in new-born infants, after it becomes impossible to obtain it from the funis; and whatever some persons may assert to the reverse, experience has quite satisfied us, that without its assistance in the cases above treated of, the fatality would have been much increased. Case No. IV. is one in proof of this assertion; here depletion was withheld, and other means, as stimulants, &c., relied upon, under the impression that too much debility existed to admit of it, and yet this debility, as the result proved, was the effect of the congestion which would have been removed by depletion. In similar cases we have depleted, and followed the depletion with the administration of stimulants with the most marked benefit, nay, it has even been necessary in some to alternate the depletion and stimulation again and again, before the oppression and fictitious debility were removed, and the proper balance between the vital organs established.—*Dublin Journal*, January, 1837.

24. *Spinal Apoplexy of New-born Infants.* By EVORY KENNEDY, M. D.—Spinal diseases, the obscurity attending the diagnosis and investigation of which is so proverbial, have of late years attracted much attention. It is to be hoped that this impetus will be productive of satisfactory results in their elucidation, an attainment only to be arrived at by those who possess an opportunity of observing and tracing these cases, recording them accurately. We shall now give a few cases of these affections falling under our notice in the new-born infant; one of the most interesting of them is spinal apoplexy. That dependent on extravasation of blood into the spinal canal is a rare disease; several such, the result of injury, are on record; but its occurrence is not confined to these.†

Dr. Abercrombie records an interesting instance of this lesion, in which the blood was effused into the canal without the theca, in an infant six days old. The most striking symptoms in this case were the fixed state of the jaw, and difficulty of deglutition. Only one case has occurred to us in which this lesion was observable on dissection.

CASE VI.—This was one of trismus nascentium, and ran the usual course of that malady, proving fatal in about thirty hours from the commencement of the attack.

* See North on Convulsions, and Davis's Obstetric Medicine.

† See Cases reported by Drs. Bright, Chevalier, and Olivier.

The following were the Post-mortem Appearances.—In the spinal canal, without the theca, a considerable quantity of blood was effused; and the veins along the medulla spinalis were very turgid, and filled with dark blood.

A remarkable coincidence then is observable between the case recorded by Dr. Abercrombie, and the one here reported, not merely in the morbid appearances observed, but in the symptoms occurring during life; indeed, so much so, that were we not aware of the extreme accuracy of observation with which that acute and talented physician and author is endowed, we might, upon the reading, have pronounced his case as one of trismus nascentium. On this subject, however, we shall not at present dwell, as trismus must demand from us a distinct consideration, in recording at some future period the results of certain treatment at present under investigation in this hitherto fatal malady.

As is the case in cerebral, so in spinal apoplexy the train of symptoms strictly apoplectic may occur without actual lesion of vessels, or effusion of blood. This may, with every propriety, be termed congestive apoplexy of the spine. The following are cases of this form of disease.

CASE VII.—Congestive Apoplexy of Spine. On the fifth day from birth, this child was suddenly attacked with screaming, which continued for an hour; it afterwards fell into a sound and protracted sleep, bordering on stupor; and, on awakening the next morning, its face was livid, eyes shut, mouth drawn down at each side, and frothing; and its arms were fixed firmly against its sides. In the course of the morning the breathing became hurried; and abdomen very tense; and it died within twenty hours from the commencement of the attack.

Dissection a few hours afterwards.—The brain, abdomen, and thoracic viscera, perfectly healthy, but a remarkable vascularity and turgescence of the spinal and medullary vessels was observable throughout their course.

This case would be described as the plethora spinalis* of continental writers, and affords a good specimen of this disease devoid of all other morbid complication.

CASE VIII.—Congestive Apoplexy of Spine. The child of C. G., a healthy boy, was attacked on the third day from birth with a general convulsive paroxysm, after which the arms remained fixed, and face livid. The back of the neck was leeches; and several dark evacuations were procured by aperient medicine. However it gradually sunk, and expired within twenty-eight hours from the commencement of its illness.

Dissection.—The cellular membrane was found generally very vascular; and the intestines spasmodically constricted in several places. The brain was very much congested, and the vessels of the medulla spinalis, the thecal vessels, and those at the origins of the spinal nerves, were extremely distended and turgid.

In the last case the disease was complicated with derangement of the child's bowels, and the intestines exhibited spastic constrictions, in several parts of their course; these spasms of the intestines may, however, have been referrible to the same irritative or morbid state of the spinal marrow, that produced the inordinate or convulsive action of the voluntary muscles.

The congested state of the spinal vessels, or inflammatory action in the membranes, may, if unchecked, terminate by effusion into the canal, and this effusion will produce such interruption in the functions of the medullary mass and its nerves, as may prove incompatible with the life of the individual.

The following case is illustrative of this fact.

CASE IX.—Effusion into the Spinal Canal. The child of A. E. (a girl) had experienced difficulty in the establishment of its respiration after a protracted birth. The day afterwards it was attacked with general convulsions and violent screaming; the hands remained firmly clenched; the abdominal muscles tense; respiration diaphragmatic, short, and frequent. In despite of leeching and aperients, the convulsions returned, and were repeated at half hour intervals throughout the following day; the child expired comatose in the evening.

The vessels on the hemispheres were much loaded, and the brain, on being divided, exhibited numerous bloody points. A quantity of serous fluid flowed from the sheath of the medulla spinalis. The medulla oblongata was very firm, whilst

* See Esquirol, *Bul. de la Faculte de Med.* Portal, *Cours d'Anat. Med.* tome iii. Frank. *De Verteb.*

the vessels of its membranes, and the venous vessels at the roots of the nerves, were excessively turgid and congested.

Morgagni* gives a case of effusion into the spinal canal, attended with pain and paralysis: it proved suddenly fatal: Chevalier,† one of a child twelve months old, in which paralysis and great pain also were present: it proved fatal in three days. Dr. Abercrombie‡ relates a case in which there was effusion of a gelatinous fluid within the canal, but outside of the theca: in this case, coma appeared to be present from the commencement of the attack.—*Ibid.*

25. *Paralysis of New-born Infants.* By EVORY KENNEDY, M. D.—Paralysis in the new-born infant is not a very unfrequent disease; it may occur as the effect of injury to the nerve in the part paralyzed; or in its course, after its transmission through the cranial or spinal aperture. Examples of this we have in injury to the portio dura, as in face presentations; or where the head has been long pressed in the pelvis against the projecting ischiatic spines; several cases of this kind have occurred to us, in which the disease was quite local, the paralysis being removed on the subsidence of the tumefaction produced by the protracted pressure.

To some it may appear that the following case was more than a mere local paralysis of the nerve, yet, on a closer examination, it will be found quite possible that no cerebral or spinal derangement may have existed.

CASE X.—*Case of Paralysis of the Seventh Pair of Nerves.* G. B. had a tedious labour, the head of the child remaining low in the pelvis for many hours. On birth there was a considerable tumour observed on the scalp, and a sloughing spot the size of a shilling on the left parietal bone. The delivery took place early on Sunday morning; and about three o'clock on Monday a remarkable alteration was observable in the appearance of the countenance. The angle of the mouth was drawn slightly to the right side, while the child remained quiet; on its crying, which it did almost without intermission, the whole face became distorted, the angle of the mouth being then drawn very much backwards and upwards to the right side; the *ala nasi* of the left side not being so much expanded as that of the right, gave the nose a deformed appearance. The eye on the left side remained permanently open, although the one of the opposite side closed in sleeping and crying. The mouth but partly resumed its natural appearance on the child becoming quiet. The brow of the affected side was not corrugated. The child, in other respects healthy, was removed from the hospital in this state.

In most cases, however, the paralysis is markedly combined with cerebral or spinal derangement; in some preceded by a distinct apoplectic seizure; in others it is preceded by a convulsive paroxysm. It often co-exists with convulsions, which generally occur in the side opposite to that paralyzed, as in the following.

CASE XI.—*Paralysis of Portio Dura of right Side, and third Nerve of left.* June 15th.—This child, when expelled, was very feeble; the mother had been fifteen hours in labour; after some time, by stimulation, &c., a convulsive respiration was established. There were two scars noticed, one on the left parietal, the other on the anterior portion of the left temporal bone. This latter was deep, and seemed as if it had been inflicted by some sharp instrument; lower down on the cheek there were one or two scratches; on the opposite side a depression was evident, but without any injury to the surface; the respiration throughout the day was laboured, with occasional sighing; the left side of the face became somewhat tumid; the right eye was kept constantly open, the pupil dilated and insensible to light; the left eye was kept closed, the pupil also dilated and insensible; an aperient was given, followed by healthy evacuations; some wine whey was administered.

At 5, p. m. The muscles of the left side of the face and body were thrown into convulsions; those of the arm and head were remarkably affected, while the whole of the right side maintained a state of perfect quietude. A bath was administered, followed by an enema.

16th. The infant has remained in a state of almost coma ever since; the left side of the face is more swollen; left eye still closed, the right remaining open; had a number of convulsive paroxysms, brought on by touching or in any way

* Epist. 10, sect. 13.

† Med. Chirurg. Journal, vol. iii.

‡ Abercrombie on the Brain, p. 356.

disturbing him, not very violent; experiences some difficulty in swallowing; bowels regular.

17th. Much the same; heart's action 120, laboured; respiration 40. A leech to the neck; wine whey.

18th. Improved by the leeching; towards evening opened for the first time his left eye; expression of countenance more natural; left side of face less swollen; drank more frequently; still some tendency to convulsive motions of the left side, but much less active; pulse 120; bowels free; was put to a healthy, free breast, but could not be induced to suck; took wine whey; a leech was applied, after which he slept quietly. On separating the eyelids at 2, p. m., the eyes were observed turned upwards, so that the pupils could not be seen; pulse now 114, small.

19th. Had a slight convulsive paroxysm yesterday evening; expression of countenance more natural; left side and arm still rigid; pupils less upturned.

20th. Spasms of left side occasionally; bowels not free. To have castor oil.

21st. Looks much better; is willing to suck, but seemingly cannot satisfy himself owing to weakness of the muscles. Head has regained its natural shape; still some rigidity of left side.

Left hospital on the 22nd, and was brought back on the 25th, the mother stating that he had a number of twitchings the day before. He now seems to make more use of his right side.

Occasionally, in these cases, convulsive twitchings occur in the paralyzed extremity, the limb, in the intervals, remaining perfectly palsied. In such, however, we generally find that the sensibility in the paralyzed limb is unimpaired, the functions of the motor tract being alone deranged. The following case affords us an example of this form.

CASE XII.—*Paralysis of the Portio Dura, and Spinal Nerves of right Side.* The head on birth was slightly compressed; the child soon rallied.

Second day. There is paralysis of the right side of the face, as also of the right arm: on being excited, a slight convulsive motion is induced. A leech was applied to the nape of the neck, and a grain of calomel, followed by castor oil, administered.

Third day. Much the same as to the paralysis. Convulsive twitchings not so frequent.

Fourth day. Has been uneasy through the night. Convulsive startings more frequent; paralysis as before. Repeat the leech.

Fifth day. Much relieved; more quiet; is rather pale; seems weak. To have wine whey with breast milk.

Thirteenth day. Has been gradually improving. Paralysis of face less apparent, but has not entirely passed away; wrist still pendulous; in other respects quite well.

Dismissed: the mother wishing to go home.

We occasionally meet with a variety in which a more or less complete paralysis of one side will occur, along with a partial paralysis of the other; perhaps merely one nerve evincing any interference with its functions, as in the following instance.

CASE XIII.—*Hemiplegia of left Side, with Ptosis and Paralysis of Portio Dura of right Side.* Immediately after birth a large, soft tumour was observed on the right side of the head, principally on the vertex, with two or three small excoriations on the left side. The left eye closed; the mouth drawn to left side; and when the child cries, the *ala nasi* and angle of the mouth at the same side are drawn up; the right eye open; right side of the face unaffected during crying. The left side of the body is completely paralyzed; the extremities are of less bulk than those of the right, and are rough to the touch; the muscles very flabby; both pupils are insensible to light.

On the third day after birth, it had three or four slight convulsions confined to the upper half of the body. It was unable to suck, but deglutition did not seem to be affected, as it swallowed with facility. A leech was applied to the vertex, followed by the warm-bath; stimulating liniments were rubbed over the spine; the child recovered and was dismissed cured on the eighth day.

Here then what a capricious selection is made as to the nerves engaged: we have the spinal nerves of the left side generally paralyzed, the functions of the portio dura of the left remaining unimpaired, whilst those of the reverse side are

interfered with, and this anomalous state increased by the paralysis of the third nerve on the left. Ascribing the paralysis of the portio dura here to injury, inflicted by pressure, after its passage out of the stylo-mastoid foramen, would do little in simplifying the matter, as it may be inferred that the same cause, whether it were congestion (or whatever else) of the brain or spinal marrow, that produced the paralysis in the spinal and third nerve, also acted upon the portio dura. In this case, as well as in No. 10, we have a good illustration of that form of paralysis of the motor nerves of the face, which has so much occupied the attention of Bell, Magendie, and Mayo, the portio dura of the right side here being alone paralyzed, whilst that of the left remained unimpaired, the reverse of what occurred in No. 10. However we have an additional interest imparted to the case by the paralysis of the levator palpebræ muscle, supplied by the third nerve, as evidenced in the ptosis with which the left eye was affected, whilst the right remained permanently open from the paralyzation of the orbicularis muscle, which is supplied with its motor nerve by the portio dura.

In cases of paralysis, as in apoplexy, we look upon it, that although they may depend on organic derangements, yet actual lesion, such as ruptured vessel, disruption of the intimate texture of the brain, or even serous effusion, is unnecessary, and rarely (much more so than in the adult) met with, as producing this disease. In the cases which we have had an opportunity of examining, we have seldom found more than a congested state of the vessels of the brain and spinal column, of the meninges* and roots of the spinal nerves. If lesions in the texture of the brain occurred in these cases, as they do in the adult, we should have permanent paralysis remaining also in the infant, a circumstance very rarely met with, if we admit the accuracy of the opinion advocated by some, that when disruption of cerebral texture has occurred, there is never reunion by cerebral matter, nor capability of transmitting nervous influence.—*Ibid.*

26. *Convulsions of New-born Infants.* By EVORY KENNEDY, M. D.—The universal liability of infants to convulsions, is but too well known; and although no climate or latitude appears to afford protection against these attacks, it would seem that certain localities and states of atmosphere predispose to them.

Those forms depending upon atmosphere or climate, such as prevail in the West Indies, or amongst ourselves in crowded hospitals, or ill-ventilated suburban districts, exhibit peculiar characters, stamping them as what we might term specific diseases; like all diseases owing their existence in a great measure to atmospheric causes, assuming peculiar types and characteristics, and proving generally more fatal in their tendencies. Under this head may be classed the epidemic convulsions described as occurring in Paris, by Gaultier Claubry; the epilepsy recorded by Dr. Longe as occurring at Copenhagen, from which nearly thirteen thousand children perished in thirteen years; the *trismus nascentium*, at present so prevalent in the West Indies amongst the children of the negroes, and formerly so fatal in this hospital, (although now comparatively but seldom† met with here,) every sixth‡ child having been destroyed by it, according to the report of the late Dr. Joseph Clarke, made in 1792.

Dr. John Clarke§ is of opinion that in every case of convulsions, the brain is at the time organically affected either directly or indirectly; and Brachet|| states, that every case of convulsions, partial or general, must be dependent upon cerebral irritation. These statements are with equal confidence denied by North and others. It is difficult, we might say impossible, to arrive at an accurate knowledge of the truth of either opinion. This much, however, may be said, that whether the cerebrum or spinal cord be previously engaged or not, when convulsions are present, there is every reason to apprehend their becoming so, and we should direct our treatment with the recollection of this fact strongly impressed upon our mind.

The frequent occurrence of convulsions as symptomatic of disease, and their rarity as an original morbid condition, are facts now universally admitted. It is

* See Cazanvieilh, Archives Gen. for May, 1827.

† See Collin's Midwifery.

‡ Mr. North, in his allusion to Dr. Clarke's Report, omits to mention that it was from *trismus nascentium* this large proportion of infants was lost. See North on Convulsions, p. 1.

§ Commentaries on Diseases of Children, p. 90.

|| Brachet sur les Convulsions.

perhaps more important than any abstract recognition of the nature of the normal state, that a rational and successful practice is generally established in consequence of the admission of this principle. The profession owes much to Mr. North for the clear and lucid manner in which he has placed this subject before them.

The primary cause of paralysis and convulsions may be described as to a certain extent identical; namely, such an interruption of or interference with the functions of either the brain or spinal marrow, as causes a variation from the uniform balance which regulates the antagonizing muscles, and retains them in a state of neutralization.

Whatever be the actual state of disease or lesion in the cerebro-spinal system in these cases, in paralysis there would appear to extend from it a defective stimulation to the muscle or muscles paralyzed; on the contrary, in convulsions this stimulation would appear to be in excess.

This neutrality of the muscles may however be disturbed in two ways; either by the diminished contraction of one muscle or class of muscles, leaving the antagonizing muscles in excess of action from want of neutralization; or, from excess of contraction in one class, rendering the ordinary contractions of their antagonists unavailing in neutralizing their action. This latter is the state generally met with in convulsions, the former in paralysis. The excess of contraction may again be either permanent, as we see in tetanic fixture of the limbs, trismus, &c.; or it may be temporary, producing, by the alternating excess and diminution of its contractions, those sudden spastic motions called convulsions. Not unfrequently these very different states of paralysis, and permanent spastic or convulsive action, are confounded, from the fact of the limb occasionally remaining fixed and motionless in both; this difficulty in diagnosis is further increased, by the fact of paralysis of one class of muscles in a limb, say the extensors, occurring whilst the natural contractions of the antagonizing muscles, the flexors, fix it, and cause it to exhibit the appearance we would expect in a limb fixed from excess of muscular stimulation.

The following case is illustrative of that form of excess of muscular contraction, in which there is combined with occasional increases of muscular stimulation, a permanent excess, producing a fixed state of certain limbs, which in this instance exhibited all the characters of catalepsy.

CASE XIV.—*Convulsive Action of Muscles of Deglutition followed by State of Catalepsy.* This child, a girl, small sized, was very weak when born, the labour had been tedious, and she was with difficulty brought round. The cuticle of the hands, feet, and body was observed to peel off in scales. Cerebral oppression; face deep coloured; lips livid; and a heavy smell from person. Ordered wine whey, and a warm-bath, castor oil, and an enema if necessary. Next day, 27th, lies heavy and stupid; rarely cries; respiration abdominal, slow, and irregular; each ordinary respiration followed by two half respirations; bowels freed. Leech to the nape; warm-bath. Evening:—Leech did not fasten; child cold, restless; surface dark-coloured; occasionally uttered a bleating scream. On offering drink she became convulsed; the spasmodic action commencing with the diaphragm; the muscles of the pharynx became next engaged; when swallowing was attempted, the whole muscular system became convulsed. The lower jaw was spasmodically elevated and depressed in the attempt to swallow: the mucous membrane of the pharynx of a deep red colour. Two leeches were applied to the sternum, and calomel and chalk administered: a bath.

28th. Leeches bled well; quieter through the night; deglutition more easy, but still attended with a convulsive movement. Mucous membrane not so red: bowels free. Evening:—Twice during the day uttered three or four bleating screams as if in pain, followed by complete opisthotonos. The eyes became fixed; pupils dilated, not contracting under the stimulus of light; arms firmly flexed; hands clenched; respiration momentarily suspended. In this state she remained for a minute, the heart meantime acting violently. A convulsive sob, occurring irregularly, was the first evidence of returning respiration. Pulse 160. Pupils, after the paroxysm, obeyed the light; but the surface continues dark; lies, in the intervals, with the arms and legs firmly flexed; bowels freely moved; discharge offensive; deglutition improved; has been for some hours comparatively at ease: bath; continue powders.

29th. Convulsions returned in the night; swallows freely; seems weaker; respiration and pulse as yesterday. Continue powders.

30th. No decided convulsions since; but lies with extremities in a state of tonic contraction.

September 3d. Has for the last three days remained in a state of seeming catalepsy; swallowed whatever was given to her; bowels acted regularly; by degrees she aroused and became more lively; the contraction of the extremities was not so continued. In this state her mother insisted on taking her out of hospital.

The following case is an instance of convulsions occurring as consequent upon retention of the meconium, and deranged bowels—one of the most frequent causes of secondary convulsive attacks observed in new-born infants.

CASE XV.—*Convulsions symptomatic of retained Meconium and Deranged Bowels.* This child, a boy, the day after birth refused the breast, and seemed to suffer abdominal pain. A grain of calomel and some castor oil were administered, which appearing to produce griping, the child was put into a bath. Next day, it was stated that the medicine did not act well; the evacuations were scanty, at first blackish, and latterly like dry moss, with a discharge of a considerable quantity of flatus. Towards evening he showed a tendency to convulsions; the eyelids were firmly closed; on separating them, the pupils were contracted; hands strongly clenched; lips compressed; tongue tremulous; respiration laborious; there was some difficulty of swallowing. A slight rash was observed on the upper part of the thorax; the abdomen was tumid; the mucous membrane of the pharynx high-coloured. Ordered an enema, with a few drops of spirits of turpentine, to be followed by a bath. A leech to be applied to the nape of the neck: some wine whey. Next day, 13th, he was improved; bowels acted freely; discharge green and pasty; urine scanty; rash more general; sucks more willingly; seems still to suffer pain; pupils more natural. Calomel, half a grain twice in the day. Evening:—Paroxysms of pain recurred frequently, with convulsive twitches, increased by the discharge of fæces or urine, which is now more abundant. Had a leech applied to the neck at two, P. M., followed by a bath, with relief.

14th. Slightly uneasy through the night; convulsive motions not so frequent; bowels once freed; discharge lighter coloured; funis separated. To have some castor oil.

The further treatment of this disease consisted in small doses of calomel at long intervals, with aperients interposed. The secretions gradually became more healthy, and the tendency to convulsive movements decreased in the same proportion; the rash also disappeared. He was attacked on the 16th with ophthalmia, first of one eye, then of the other; and was dismissed on the 26th, cured.

Tissot ascribes cases of this kind to a spastic constriction of the sphincter and preventing the escape of the meconium.

As in more advanced childhood, convulsive attacks not unfrequently occur precursory to the coming out of the eruption in exanthemata; so in the eruptive diseases of new-born infants, the cerebro-spinal system appears to be affected in a marked manner about the same period. The following cases are exemplary of this.

CASE XVI.—*Convulsions preceding Miliary Eruption.* The child of F. M., a boy, when born was very weakly and discoloured, the extremities became quite blue. The mother was at the time labouring under typhus fever. Warmth was applied, and a little wine whey given. In eight or nine hours he was observed to be seized with convulsive twitches, the arms being occasionally flexed with a sudden spasmodic motion; the fingers firmly bent, the thumbs drawn in to the palm of the hand; the muscles of the face were slightly convulsed; bowels confined. One grain of calomel to be given, followed by castor oil. Next day, 21st, convulsive startings have continued ever since with scarcely any interval; bowels relieved; discharge green. The skin is of a yellow colour, and feels exceedingly rough and harsh; there is a most disagreeable fætor from this child. A leech to the nape; breast milk.

22nd. Convulsive motions as before, particularly of the arms and hands. An eruption, consisting of a number of minute vesicles, is apparent over the head and chest, and in patches on the face. This commenced by a red patch, which

on being examined under a microscope, was found to be made up of a congregation of very minute vesicles with vascular interspaces; the vesicles gradually enlarging, the vascular interspaces disappeared, and it now presents the appearance of a vesicular miliary eruption. Bowels free; discharge black and green. Heart's action 104; respiration 66. To have one-third of a grain of calomel three times in the day: a bath and wine whey.

23d. Convulsive twitchings continued through yesterday, but towards evening became less frequent; was pretty quiet all night, and had but one slight convulsive paroxysm this morning. Pulse 120; respiration 36.

24th. Attempted yesterday to suck; was given some breast milk, and lay very quietly dozing before the fire; had slight twitches twice in the night; sucked more freely; evacuations more healthy. Eruption has disappeared; skin still rough and harsh; yellow tinge remains.

27th. The cuticle of those places which had been the seat of the eruption is now desquamating. No return of convulsive movements; bowels acting healthily; is lively and sucks well.

CASE XVII.—*Partial Convulsions symptomatic of Strophulous Eruption.* The child of M. R., a healthy boy, was attacked on the sixth night after its birth with screaming and convulsions, which at first commenced in one arm, and then extended over the whole of one side of the body; recurring at intervals of an hour for several fits.

In the course of a few hours, a profuse strophulous eruption appeared all over the body, forming large blotches over the joints. After the eruption had come freely out, the convulsive fits diminished in frequency and duration, and soon ceased entirely. The child recovered.

In the progress of inflammatory attacks of the viscera or cavities, convulsions occasionally occur, either as symptomatic of the serious state of disease under which the child labours, or as the result of the extension of the disease to the cerebrum, spinal cord, or their coverings. The following case exhibits an instance of the latter form of convulsion, and appears to depend upon general inflammatory action in the serous tissues, extending to the serous membrane of the brain and medulla oblongata.

CASE XVIII.—*Convulsions, with serous Effusion into Cranium and Spinal Canal.* The child of A. L., a girl, was attacked with laboured, panting inspiration on the 26th July, when twenty-four hours old. Fæcal discharges still dark, treated with leeching, calomel, and aperients, but without relief. On the 27th it had several convulsive twitchings of the upper and lower extremities, the bowels acted freely, panting respiration continued. It remained with little change, the convulsive twitchings occurring occasionally, until the morning of the 28th, when it expired.

Post-mortem Examination.—In addition to copious sero-purulent effusion into the cavities of the thorax, and solidification of the lungs, the vessels of the brain were found very turgid, with its substance of a pink colour; a table-spoonful of fluid was found in the ventricles, and a much larger quantity at the base of the brain, and within the theca vertebralis.

We have already seen, in treating of apoplexy and paralysis, that convulsions not unfrequently occur as the effect of these. On the other hand, convulsions occasionally precede an apoplectic or paralytic seizure. They thus either stand in the relation of cause and effect towards each other, or the same state of sympathy or the same derangement of the sentient and motive centre that produced the one form of disease may give rise to the other. In the following case, a well marked apoplectic seizure succeeded to the convulsions, and a retarded action, bordering on paralysis of the respiratory muscles, attended them. This case is further interesting from showing the necessity that exists for depletion when the head becomes engaged after convulsions; as we feel no hesitation in stating that the chances of this child's recovery were very much lessened by abstaining from this plan of practice.

CASE XIX.—*Convulsions followed by Apoplexy and Death.* The child of A. B., a male, was in perfect health until the fifth day, when it got a convulsive fit, after which it became of a dark livid hue; pulse fifty, breathing scarcely perceptible; its bowels had been acting naturally. It was put into a warm-bath, and spirit of ammonia liniment applied to the chest, when its breathing gradually became

perceptible, but slow. It remained for twenty-four hours in a state of stupor, and insensible to stimulants, an interval sometimes of forty seconds occurring between each respiration; ammoniacal injections were thrown into rectum, the strongest stimulating liniments rubbed upon the surface of the body, and the warm-bath used, but it expired about thirty hours from the commencement of the attack. Unfortunately no post-mortem examination could be obtained.—*Ibid.*

27. *Chronic Urethritis cured by injections of extract of Ratanhia.*—Dr. SALVADORE has successfully treated a case of gonorrhœa of three years standing, and which has resisted a host of remedies, by injections of extract of ratanhia. The discharge was copious, of a yellow colour and viscid. Dr. S. ordered a drachm and a half of the extract dissolved in four ounces of rose water, with the addition of thirty drops of laudanum, for three injections; one morning, noon, and night. The next day the discharge had entirely ceased, but to confirm the cure, two injections, and afterwards one a day, for a week, were used.—*Il Filiatre-Sebezio*, for Nov. and Dec., 1836.

28. *Delirium Tremens treated with Carbonate of Potass.*—Dr. STINTZING has been in the habit for several years of employing this treatment. He gives the salt in doses of six to seven grains, with ten grains of calcined magnesia. He also used it in pleuritis, with benefit.—*Kleinert's Repertorium*.

29. *Leucorrhœa cured by Iodine.*—Dr. MULLER has recorded in the *Wochenschrift für die gesammte Heilkunde*, No. 40, 1836, a case of obstinate and chronic leucorrhœa, cured in four weeks, by the ointment of hydrodate of potash, rubbed, morning and evening, on the internal surface of the thighs.

30. *M. JADELOT's treatment of Scald-Head.*—According to the classification adopted by Bielt, Rayer, Cazenave, and Schedel, the term "tinea" comprehends several cutaneous affections which have their seat in the hairy-scalp. The form of *vesicle* constitutes the elementary lesion in one species, producing eczema. The other form appears as the result of a *pustular eruption*. The latter sometimes assumes a peculiar character, becoming assembled together in what are called "favi," and thus produce the true porrigo. The more mild forms of tinea constitute the two varieties of impetigo, which almost always attack both the scalp and the face at the same time. It is to the latter that the treatment of M. Jadelot is applicable, the tinea favosa generally requiring the much more tedious and expensive method of cure professed by the "Brothers Mahon," in whose hands it still remains a secret.

In many cases the simple forms of tinea readily yield to the treatment which is commonly employed; but it must be confessed that in many other cases they are extremely rebellious. In addition to this it may be remarked, that the uncertainty and length of the treatment in general use have very often the effect of preventing the children of the poorer class (to which they almost exclusively belong) from having recourse to any medical advice whatever. Under these circumstances it is desirable to find a method of treatment which shall at once be cheap, and not require the length of time that is generally employed. That of M. Jadelot, though but little known, has the merit of possessing the above advantages, and we can bear testimony to its efficacy, from having seen it employed with considerable success at the *Hospital des Enfants Malades*.

When the eruption presents any of the characters of an acute affection, M. Jadelot commences by combating these with cataplasms, with frequent lotions of some emollient fluid, (decoction of mallows, &c.) with baths. When the chronic stage has arrived, he first removes the crusts by an application of poultices, continued for two or three days; the hair is then closely shaved, and this latter operation is performed twice a week during the course of the treatment.

The child's head must now be washed twice a day with the following lotion:—

Sulphuret of potassium, one drachm; *water*, one pint.

And after each ablution a thin layer of the following liniment should be applied over the diseased spots:—

Rx. *Sulphuret of potassium*, three drachms; *soap*, two drachms; *oil of poppy*, six ounces; *oil of thyme*, one scruple.

Having liquefied the soap, dissolve the sulphuret of potassium in the oil, and then add the volatile oil. The liniment alone is often sufficient for the cure of recent cases of eczema and impetigo, the lotion, however, aids and abridges the treatment.

When the children, in addition to tinea, are affected with some other cutaneous eruption, it will be right to employ sulphur baths; or, when the parents are too poor to have recourse to the latter, ablution of the affected parts, with the sulphuretted lotion above mentioned, may be substituted in their place. Since the first of January, 1837, M. Jadelot has submitted fifteen girls, affected with tinea, resident in the hospital, and all the out-patients, to this method of treatment. The mean time required for a cure, which was generally obtained, varied from eight to fifteen days. In a single case the treatment was prolonged to two months.

As to *tinea favosa*, properly so called, the same method, employed in a few cases, was always attended with a notable improvement, and, probably, would have triumphed, at length, over the obstinacy of the complaint, had circumstances permitted its being continued for six, twelve, or even eighteen months, the time often required for the cure of this disease by the celebrated treatment of the "Brothers Mahon."—*Gaz. Méd. de Paris*.

SURGICAL PATHOLOGY AND OPERATIVE SURGERY.

31. *Pins taken from the Body*.—Two interesting examples of this are related in a recent number of the *London Medical and Surgical Journal*, (March 18th, 1837.) The first case was that of a woman who had a packet of pins in her left bosom, and was quietly walking along, when a drunken man rushed against her with such force, as to drive the contents of the package into her left bosom; a good deal of hemorrhage immediately set in; a professional gentleman removed a few of the pins, but was obliged to leave the greater quantity in the organ, they had entered so deeply. In a few months after, she was admitted into the hospital. A cicatrix existed upon the surface of the left mamma, at the point of entrance, also the cicatrices of three or four incisions upon the upper part of the arm, and as many more upon the left side of the trunk, and upon the upper and posterior part of the left lower extremity. During her stay in the hospital, whenever a pin was about coming to the surface, a slight degree of redness of the integuments always preceded, and pain was felt in the spot, particularly upon handling it; with the greatest certainty of finding a pin, an incision would then be made, and the pin found four or five lines from the surface, which was readily removed with a forceps. Before she left the hospital as many as twenty pins had been altogether removed, and that which was last removed, invariably made its appearance at a greater distance from the seat of the injury than the one which preceded it. Thus the last pins removed were from the dorsum of the left thumb, and the anterior part of the left ankle. In their course they invariably followed the intermuscular cellular intervals, and confined their route to the left side of the body, never passing the *median cellular boundary*.

In the other case the individual was pinning up some bed curtains previous to finishing them, and this operation requiring more hands than one pair, some of the servants volunteered their services, and amongst the rest a smart dapper footman. This gentleman's attention being more directed to the shape and figure of the principal, who was standing on a high stool with her mouth full of pins, than to any use he was present for, gently commenced paying his devoirs by giving a portion of her gluteous maximus (which was in the most inviting position for such an operation) a smart embrace between the finger and thumb of his right hand. She started, her foot slipped, her ankle was strained, but, what was of more serious consequence, she swallowed the pins! The poor girl suffered great pain and fright—a medical man was immediately sent for, who removed as many pins as he could from the bag of the pharynx. She was admitted into hospital. Several pins in addition were brought away; and she left, in about two months, in the full conviction that at least two dozen pins were distributed in various parts of her body. For a year afterwards she was a constant visiter at hospital, to have pins removed from various parts of her body. Unlike the first case, the

pins followed no regular boundary, which is to be accounted for by their entering the bag of the pharynx in every direction.

32. *Treatment of Hydrocele by Injections of Iodine.*—M. VELPEAU prefers a solution of iodine to wine as an injection for the cure of hydrocele. He employs the tincture, in the proportion of one to two drachms to an ounce of water. Having emptied the cyst by puncture, he injects from one to four ounces of this liquid. It is not necessary to fill the tunica vaginalis, provided the tumour is pressed so that the medicament is applied to the whole of its interior. The fluid is then withdrawn, but without fearing to leave a small quantity. As it is not necessary to fill the cyst or warm the fluid, a common urethra syringe answers for the injection. If the hydrocele is large, it may be necessary to repeat the operation three or four times. After the injection the part swells for three or four days, but without causing fever or severe pain; resolution then takes place rapidly. M. V. has successfully treated twenty cases by this method.—*Archives Générales*, January, 1837.

33. *Ligature of the Subclavian Artery, below the Clavicle.* By Signor CATANOSO.—A middle-aged man was admitted in Sept., 1835, into the hospital at Messina, with an extensive and deep cut in the axilla, which he had received three days before. He had fallen from a tree, and a sharp stump of a branch had penetrated deep into the armpit. The wound bled copiously at first, but had ceased spontaneously. The hæmorrhage had recurred several times. It was not suspected on the patient's admission, that the axillary artery had been wounded. The compresses, however, which had been applied over the wound, were continually wet with the oozing blood; and when some clots were removed, there was exposed a tolerably deep excavation, which had already begun to suppurate. On the 14th day after the accident, an alarming hæmorrhage took place, and Signor Catanoso determined to put a ligature round the subclavian artery, below the clavicle. A semicircular incision, pointing downwards, was made through the integuments, and the pectoral muscle having been then divided along the same line, the operator arrived at a tough inextricable fibro-cellular tissue, loaded with fat. This part of the dissection required great care, and occupied a long time. At length, the superior edge of the pectoralis minor muscle was reached, and the pulsations of the artery were felt. It was surrounded with its large accompanying vein, and the axillary plexus of nerves. These were at length separated from it with no small difficulty, and the aneurism needle, provided with one small but strong thread, was passed round it. When the ligature was tied, its two ends were cut off. The wound was then dressed simply, and the arm confined to the side. The pulse in the brachial artery at this time was not to be felt. At first, the wound appeared to be disposed to heal by the first intention; but in the course of two or three days it began to suppurate, and discharged a quantity of sanious offensive pus, mingled with some coagula of blood. The wound required to be enlarged to give a free issue to the discharge, and compresses and bandages were applied over every part, where the pus was disposed to collect. By the diligent use of these means, the state of the patient improved considerably, until the 19th day after the operation, when an arterial hæmorrhage took place. The clots being removed, the spot whence the blood proceeded, was filled with the styptic powder of Bonafoux, (composed of colophony, charcoal, and gum arabic,) and compresses of lint were then secured over it, by means of a bandage applied tightly round the shoulder. Fortunately the hæmorrhage did not return, and the wound slowly healed up. The cicatrization was not however complete for nearly four months.

Signor Catanoso has appended to the report of the preceding case a long and very elaborate memoir on the ligature of wounded arteries, and on the best method of securing the subclavian. We are much pleased to find that his views on all practical points entirely coincide with the opinions and practice of the best English surgeons. He seems to be well acquainted with some of the works of our most esteemed authors, as Hodgson, Cooper, Jones, and others. The operation of tying the artery below the clavicle is seldom attempted in the present day; the extreme difficulty of reaching the artery, and the circumstance of its being quite enveloped with large nerves and veins, are powerful objections to this method. It is much easier to reach the artery above the clavicle. Whether the

secondary hæmorrhage in the preceding case came from the tied trunk, or from some smaller vessel, is uncertain. We think the latter supposition the more probable, seeing that the bleeding ceased by the use of the styptic powder and of compresses.—*Med. Chirurg. Rev.*, April, 1837.

34. *On Pessaries, and the Radical cure of Prolapsus Vagina et Uteri.* By Professor DIEFFENBACH.—This distinguished surgeon has long discontinued the use of pessaries in his own practice. To them he ascribes the occurrence of many diseases of the vagina and uterus, as well as of the neighbouring parts; and although he admits that there may be cases in which their use is likely to be beneficial, he considers that such cases are comparatively very rare. He was led to adopt the mode of practice which he here recommends, by seeing the case of a woman, the subject of prolapsus of the vagina and uterus, in whom parts of the vagina sloughed, during its state of prolapse: the uterus and vagina were replaced whilst granulation was going on, and the result was a complete cure of the disease. The first case with which Dieffenbach met, after this, on which he was determined to imitate the natural process, was that of a woman with prolapsus of the uterus, which could be easily replaced, but as easily prolapsed, when it was not kept in by a sponge.

The operation was thus performed. The bladder and rectum were emptied; the uterus was made to prolapse, and a portion of about the size and shape of a hen's egg was removed from the left side of the vagina, the sharper end of which was directed backwards, the opposite end forwards, and came in contact with the nymphæ. The fold was then seized with a pair of forceps, the uterus being previously pressed somewhat backwards to take off the tension of the vagina, and then dissected out with a slightly curved scalpel. The same process was repeated on the right side. The wound was cleansed, and at its hinder part two sutures were applied, the uterus was next replaced, and three other sutures were applied within the vagina. Had all the sutures been completed before the attempt was made to replace the uterus, it is possible that its reduction could not have been effected. Some little irritation followed, which ceased, however, on the removal of two of the sutures from either side. On the sixth day, all the sutures had separated.

Since the time at which Dieffenbach performed this operation, he has repeated it very often. He now employs a smaller number of sutures; usually only two, and never more than three. In many cases he uses no sutures at all, as the borders of the wound in the vagina mostly lie low in contact after the uterus has been replaced. The suture is required where there is great relaxation, and a want of irritability of the vaginal membrane; on the other hand, when the individual is robust and the vagina thick, it is better to dispense with sutures. When the surface of the vagina is mortified, it is necessary to fill it with charpie. Tepid mucilaginous injections should be used for some days, and after these, cold water. If, when cicatrization is going on, there is no evident narrowing of the vagina, a compress of charpie smeared with a resinous ointment, and the repeated application of the lapis infernalis, should be employed.

Dieffenbach has often removed the fold from the vagina after having replaced the uterus, by drawing a portion of the former outwards, and cutting it off by a knife with a sawing motion. This is a far easier mode of operating, but great care is necessary not to injure the bladder or rectum, which may happen if the fold of vagina, when tightly stretched by the forceps, should be cut off too near its base. Sutures are not employed in this case.

The position of the patient in the operation above described, should be the same as that for lithotomy. The state and relations of the rectum and bladder with the vagina and uterus should be ascertained, previous to the operation; of the former, by means of the finger, of the latter, by Desault's silver catheter. The catheter sometimes draws off a quantity of retained urine; the evacuation of the bladder being often rendered very difficult by the prolapse of the uterus.—*Medicinische Zeitung*, No. 31. 1836.

35. *Ulceration of the Cæcum, and Abscess of the Right Iliac Fossa, communicating with the interior of the Bladder and producing the symptoms of Irritable Bladder.* By HENRY JAMES JOHNSON.—The following case is in some respects so remarkable

as to deserve to be recorded. The diseases of the urinary organs merit in a high degree the attention of the surgeon, for they are numerous, important, and not unfrequently obscure. It is only by a very careful examination of the urine, and by a comparison of its states with the other symptoms, that we can hope to guard ourselves against the many sources of error that interfere with the formation of a correct opinion.

The facts that have been elicited by recent investigations, with respect to the pathological changes that accompany an albuminous condition of the urine, are of a highly interesting character. It has been proved, beyond the possibility of doubt, that such an alteration of the urine, if permanent; and particularly if accompanied with prominent symptoms of disturbance of the bladder or the kidneys, is usually the consequence of organic changes in the latter. Of all the diseases of the kidney, and there are several, that lead to the secretion of albuminous urine, chronic inflammation, ending either in the mottled state described by Dr. Bright, or in abscesses in the cortical or tubular structure, is the most frequent.

It is singular to observe the variety displayed in the symptoms of what, for want of more exact information, we must consider chronic inflammation of the kidney. In one patient, the irritability of the bladder is excessive, and he seems to labour under all the miseries occasioned by the presence of a stone in it. In another patient, there is nothing which attracts his own, or, perhaps, the physician's attention to the urinary apparatus. The extent of lesion is no measure of the severity of symptoms, nor is severity of symptoms a positive indication of any lesion at all. I examined lately the body of a gentleman who died worn out by the cachexia induced by the abuse of mercury. His urine for many weeks before his death, was albuminous, and there was great irritability of the bladder. Yet, on dissection, I could detect no further disease in the kidney, than a very dubious injection of the mucous membrane of the pelvis of the ureter. Why one individual, affected with chronic inflammation of the kidney, should labour under severe symptoms of disturbance of the bladder—and why another, with equal or with greater renal disease, should not, are questions which it appears impossible to answer satisfactorily at present.

Contradictory as facts in some measure are, obscure as the symptoms of alterations of the kidney in their earlier stages must be owned in many cases to be, there are some phenomena which, taken in the aggregate, will not often deceive the acute and experienced observer.

When a patient complains of extreme frequency of making water—when he passes very small quantities at a time—when, in the act of micturition, and after it, he experiences a cutting pain at the end of the penis, and uneasiness referred to the perineum or the neck of the bladder—when the urine is decidedly albuminous, acid, and free from mucus—and when, on sounding the bladder, no stone is discovered in it, while examination by the rectum detects no change in the former organ or urethra—the surgeon may suspect, and his opinion will be very seldom a false one, that the symptoms depend on disease of the kidney.

It is not my object to go into the history of chronic inflammation of the kidney. Our knowledge of the pathological change in its commencement—of the symptoms that then mark it, if any positive symptoms do so—and of the treatment of the malady in all stages—is, unfortunately, both limited and vague. My reason for making these observations has been to clear the way for the appreciation of the characters of the case that I now proceed to describe. It will be seen that the case presented such symptoms as will generally justify us, in supposing that renal disease exists, yet the event shewed that there was none.

Case.—In the latter part of last summer, I was requested to see a respectable young man, a tradesman, who was then in the following condition.

He was much emaciated, and had all the external appearances of serious organic disease.

What he principally suffered from was frequency of micturition. He was obliged to make water every half hour—he passed little more than an ounce at a time—prior to the act of micturition he experienced uneasiness in the region of the bladder, and dull pain in the perineum—in the act, he had cutting pain at the end of the penis—and this continued for some little time after the last drops of urine had been voided. He was not aware that the stream of urine was ever

suddenly arrested, but once or twice there had been a tinge of blood in it, and the last drops were always discharged with tediousness and difficulty. He complained of no pain in the back, but referred to the urethra and the bladder as the principal seats of his uneasiness. Pressure over the pubes was productive of pain.

There was cough—the respiration was imperfect and hurried—he had at times what, from his description, appeared to be purulent expectoration—the chest sounded indifferently on percussion—there was bronchial respiration pretty generally in the upper lobe of each lung—and pectoriloquy existed under the right clavicle. Thus the general and the physical signs of phthisis were unequivocal. The pulse was frequent—there was a disposition to hectic—the bowels were rather irregular, being sometimes confined, and sometimes rather relaxed.

The urine was pale, rather turbid and acid. On applying nitric acid and heat, the presence of albumen was distinctly shewn, but there was in addition a sort of precipitate of rather opaque whitish flocculi, which were not unlike adipocire in appearance.*

On introducing a catheter into the bladder, I found that the patient was able to empty it in the ordinary act of micturition. No calculus could be detected. The introduction of the instrument was attended with much spasm of the muscles of the bulb, and with considerable irritation and pain in the perineum and bladder. Whilst the instrument was in the latter, the finger was introduced into the rectum, and pressure made on the prostate and trigone. This occasioned comparatively little inconvenience.

The history of the case may be briefly told. For some months the patient had laboured under phthisical symptoms, for which he had been judiciously treated by his usual medical attendant, Dr. Thompson. These symptoms were relieved, when, suddenly, about two months before he applied to me, he was attacked with a frequent desire to make water, and with the other symptoms of irritation of the bladder. The means employed to relieve the disorder were attended with little benefit, and he had gradually been growing worse before he came under my observation. It is proper to observe that from the period of the accession of the urinary complaint, the thoracic had declined in prominence and in importance.

As the usual symptoms of disease of the bladder were not present—as I could not detect the existence of a calculus—and as the urine was albuminous, I conceived that the disease was probably in the kidney, and that the irritability of the bladder was merely symptomatic of that. Yet the suddenness of the access of the symptoms, the anomalous deposit in the urine, and the uneasiness on pressure in the region of the bladder above the pubes, were circumstances that I could not satisfactorily explain.

I applied leeches to the hypogastrium, and prescribed a combination of the tincture of henbane with the liquor opii sedativus and the liquor potassæ. Under these means, combined with rest in the recumbent posture, a regulated diet, and attention to the bowels, the pain on pressure above the pubes disappeared, and the frequency of micturition was rather diminished.

Various means of lessening the irritability of the bladder were tried. All medicines possessed of a diuretic property were injurious. The liquor potassæ, the infusion of the uva ursi, the infusion of buchu, severally increased both the frequency of micturition and the attendant uneasiness and pain. Narcotics, whether given by the mouth, or in the form of injection, or in that of suppository, were alone of any service. They reduced the times of making water to four or five in the day, and about as many in the night, and the quantity of water passed at once was augmented to a quarter, or even to half a pint. The irritability of the bladder varied from day to day, without adequate apparent cause. One night the patient would only be compelled to rise three or four times, on the next, he would, perhaps, be disturbed nine or ten times. The quantity of albumen contained in the urine gradually decreased, in this too there was much variation. On one day there would be a large albuminous precipitate, and two or

* I regret that this was not more carefully examined. I had intended to have requested some gentleman practically conversant with analytical chemistry, to ascertain the exact nature of this unusual deposit.

three days afterwards, the application of acid would merely render the urine rather cloudy.

Although, upon the whole, the urinary symptoms were much mitigated, and the sufferings of the patient materially diminished, he evidently grew weaker. It was between two and three months from my first seeing him, when he rather suddenly died. This was in the commencement of October last. I examined the body, with the assistance of Dr. Thompson, and of Mr. Oliver, one of my pupils.

The emaciation had gone to a great extent.

There were tubercles in both lungs, to the upper lobes of which they were confined. Some of the tubercles were softening, and in the apex of the right lung were two or three small vomicæ.

The kidneys were perfectly sound, and the ureters were unobstructed.

The bladder appeared, at first sight, healthy. There was no inflammation of its mucous membrane, no thickening of its parietes. But on its anterior wall, about the junction of its middle and upper third, was a small, round, fistulous opening, scarcely of the diameter of a common pea. The mucous membrane on the margin of the aperture was perceptibly injected, and the aperture itself had been evidently the result of ulceration. The aperture in the bladder communicated with a sinus in the cellular membrane between the organ and the abdominal muscles at their pubic insertion. From this point the sinus proceeded in the cellular membrane between the muscles on the right side and the peritoneum to the right iliac fossa, where it opened into a sort of abscess, partly formed by the cellular membrane there, partly by the cæcum, a large portion of the wall of which was destroyed by ulceration. Thus the bowel was freely laid open into the cellular membrane of the iliac fossa, from which a sort of winding abscess proceeded to communicate with the interior of the bladder. The mucous membrane of the cæcum, of the ileum at the ileo-colic valve, and of a small part of the ascending colon, was in a state of ulceration.

No other morbid appearance was discovered.

There can be little doubt of the real nature of this interesting case. It was originally one of ulceration of the mucous membrane of the cæcum, that affection being perhaps connected with the softening of pulmonary tubercles.* The ulceration extending through all the coats of the bowel, its interior was laid open into the cellular membrane of the iliac fossa, and a fæcal abscess resulted. The suppuration gradually travelled along the continuous cellular membrane, until it arrived at the front of the bladder. In this it occasioned ulceration, and the fistulous aperture that followed. It is probable that the sudden access of symptoms of irritation of the bladder, marked the period of its perforation.

Why the abscess should take this course, and why the aperture in the bladder should be so small, it would now be useless to inquire. It is clear that the albumen contained in the urine, was occasioned by the pus that found its way into the bladder.

But it is not so easy to determine the immediate cause of the irritability of that organ. Was it the existence of the small fistulous opening in it, or was it the discharge admitted into the bladder through the opening? The irritability of this organ, which results from disease of the kidney itself, is exceedingly capricious. Sometimes there is considerable disorganization of the kidney, and the urine is highly albuminous, without any, or with very little irritation of the bladder—sometimes this is excessive, with only moderate alteration of the kidney, and with only a small quantity of albumen in the urine. It is obvious that the careful observation of facts, and the accurate discrimination of particulars can alone explain these apparent inconsistencies, if they admit of satisfactory explanation at all.—*Med. Chirurg. Rev.* Jan. 7, 1837.

36. *Nævi Materni cured by Chloride of Zinc.*—Mr. CALLOWAY, of Guy's Hospital, has employed with considerable success, the chloride of zinc in the cure of cutaneous and subcutaneous nævi materni. It is rubbed on the part until the

* Ulceration of the mucous membrane of the termination of the ileum and commencement of the great intestine, is common in advanced phthisis, and is seen occasionally in its incipient stage.

skin becomes slightly discoloured, and repeated at intervals.—*British Ann. Med.*, May 19, 1837.

37. *Division of the Tendo Achillis for the relief of some of the deformities of the Foot.*—In our number for November, 1834, p. 247, we invited the attention of the profession to this operation, and detailed two cases in which it had been successfully performed by Dr. STROMEYER, of Hanover; and in our preceding number, p. 232, we noticed some cases more recently treated by M. Bouvier, by the same method.

At a meeting of the Royal Medical and Chirurgical Society, on the 28th March last, we learn that a paper on this subject was read by JOHN WHIPPLE, Esq., the report of which and of the discussion it gave rise to, are given in our cotemporary, the *British Annals of Medicine* for April; and as they possess much interest we are induced to transfer the report to our pages.

“Mr. Whipple relates two cases of individuals affected with deformity of the feet, on whom he had practised the above-named operation with entire relief. The first patient is a boy, who came under the care of the author in the last year, being then about 8 years of age. He was born healthy and perfect in every respect, but as soon as he was put upon his feet he was observed to pitch invariably upon the points of his toes. This undue extension of the feet gradually increased, in spite of various instrumental means of relief, which were for several years continued under the superintendence of gentlemen celebrated for the management of deformities, and the advice and assistance of medical men of eminence.

“When the author first saw him, he was incapable of locomotion without the aid of crutches, and even with this assistance he could only throw the lower extremities simultaneously forward during the artificial sustension of the body. It appearing to the author that the deformity was attributable neither to spinal irritation nor to any alteration in the form of the individual bones, but solely to deficient length in the muscles or their tendons, he resolved to divide the tendons of the gastrocnemii to obviate this condition. The operation was performed by passing a narrow, curved bistoury downwards and outwards, across the tendon about 2 inches above the os calcis, and dividing it in the withdrawal of the bistoury.

“The external wound healed by the following day; in three weeks a firm band of connexion was formed between the cut ends of the tendon, and in rather more than five weeks the patient could stand alone.

“At the time the author wrote, (six months from the operation,) the patient could walk three miles without assistance. Casts of the feet were exhibited, illustrative of the former and present positions of the feet.

“The second case was one of the more common forms of club-foot, in which the sole was turned towards the opposite ankle. In this case the operation was performed in the manner before described, and was attended with as great success.

“The tension of the tendons of the tibialis, anticus, and the tibialis posticus generally coexisting with the same condition in the gastrocnemius, the author thinks would in all cases soon yield after the division of the tendo achillis.

“Mr. Langstaff considered there was great danger in dividing tendonous structures, and that the club-foot in general could not be cured by a division of the tendo achillis.

“Dr. Little stated that he had suffered from deformity of his feet similar to the second case; he wore instruments until the age of 21. At that time, Dr. Stromeyer, of Hanover, divided the tendo achillis; the relief was satisfactory, for before the operation was performed he could not walk many yards without pain, and now he can walk 12 miles with pleasure. Dr. Stromeyer differs in his method of treatment from others, inasmuch as after the complete division of the tendo achillis, he allows the cut ends to unite by lymph before he commences extension of the foot; this practice he considers prevents the chances of inflammation or disagreeable consequences that might follow the operation. The chief difficulty in the treatment of these cases is in the extension of the ligaments about the joint, which is greater in some cases than in others; but in the first case, where the foot could be placed flat on the ground immediately after the opera-

tion, Dr. L. supposes it was not so severe as many of the cases we witness in the streets.

"Mr. Shaw exhibited three examples of deformity in the foot; in one case the tendons were dissected, and remained entire in their natural situation. Mr. S. observed, that in this case, and in another where the deformity was still more striking, the shape of the bones was natural; he had also examined the bone in congenital club-foot, and found them in a natural shape; from this circumstance, it was extremely probable that even the worst deformed cases might be cured by proper means. Mr. S. objected to the division of tendons at the sole of the foot, in consequence of a liability to be drawn out of their fasciæ, and followed by injurious consequences. In cases where that practice was requisite, he would prefer the employment of suitable means to extend the ligaments and muscles.

"Mr. Langstaff inquired whether Dr. Little had seen any dangerous consequences follow the division of tendons; for Mr. L. had seen instances in which the tendons were divided, either by accident or design, and were followed by severe tetanic symptoms.

"Dr. Little had never known any serious consequences follow the division of tendons; he had seen 50 or 60 cases operated upon, and in some of these more than one tendon was divided. Regarding the division of the flexors of the foot, to which Mr. Shaw objected, that could be accomplished in the same situation where the tendo achillis was cut, and he knew of no objection against dividing the tendon of the tibialis anticus muscle. Age, Dr. L. observed, was no barrier to the operation. Stromeyer once operated on a female at the age of 53, in whom the deformity had existed since the 3d year, and that case was successful. The chief difficulty which Dr. L. had found, was the resistance afforded by the tibialis posticus, and the flexors of the foot; to obviate this, an apparatus was constructed, but the pressure of the bandages brought on sloughing, and it was abandoned on that account.

"Mr. Macilwain considers the method of Stromeyer calculated to relieve many of those cases which have hitherto been neglected. With regard to the danger which we have been taught to anticipate from the division of tendons, the idea probably originated in the circumstance that contusions and injuries of tendons or fasciæ are followed by severe consequences, as also happens in other parts of low vitality; but these are widely different from the simple division by means of proper instruments.

"Dr. Little, while at Berlin, had an opportunity of ascertaining that the club-foot deformity prevailed to the same extent in the higher as in the lower classes. In reviewing the history of the treatment of club-foot, a circumstance confirms the observations of Mr. Macilwain, viz., that the danger in dividing tendons depends on the manner in which it is accomplished. A surgeon at Frankfort, 40 years ago, completely divided the tendo achillis, and his cases did well. Another surgeon preferred only partially dividing that tendon for about two-thirds, and the other third he stretched by an extending apparatus, the consequence was supuration, ulceration, and fatal mischief. Stromeyer commenced his practice by completely dividing the tendon; he used a small bistoury, and the opening made was not larger than the blade of the instrument; his cases were all successful. Delpech, in 1824, had a different practice, he made incisions on each side the tendo achillis, and cut outwards; his cases were followed by unfavourable results. On this account he incurred the censure of the French journals, while Stromeyer was also attacked on account of his practice approaching that of a punctured wound.

"Mr. Langstaff and Mr. Davis have seen instances where gunshot and other wounds of tendonous parts were followed by dangerous symptoms; they consider the best practice is, in these cases, to completely incise the lacerated wound.

"Dr. Little states, that Stromeyer has attempted straightening the leg in some cases by dividing the tendons of the biceps and semi-tendonosus muscles; and in horses where a contracted state of the leg prevented the whole of the hoof being placed on the ground, the division of the flexor tendons has been successful.

"Mr. Davis has seen two horses where this operation succeeded.

"The president inquired what was the average time required before the treatment was completed.

"Dr. Little replied, in children it is about three weeks before the foot can be

placed on the ground, but when the ligaments are stiff, it requires five or six weeks; afterwards the limb requires artificial support for three months, by means of a steel rod, and it should be strengthened sometimes by means of whalebone. It is of great advantage to operate early in congenital cases, for the act of walking so strengthens the ligaments, and changes the position of the bones, that the treatment of the deformity is rendered more difficult. The youngest case in which Stromeyer operated was a child 11 or 13 months old."

38. *Case of Lithotripsy. Inability to withdraw the instrument from the Urethra.*—A man, æt. 57, of good constitution, was admitted into the Hotel Dieu under M. Roux, with symptoms of stone in the bladder, which he had experienced for nearly a year. He was sounded and the stone felt; on which it was resolved to perform the operation of lithotripsy. The first seven operations were successful, the stone each time being laid hold of and crushed; but, at the eighth time, the operator laid hold of a fragment with the *brise-pierre*, and tried to extract it whole through the urethra, instead of crushing it, when, on coming to the spongy part of the urethra, the instrument became fixed, so that it could not be moved either backwards or forwards. As it was necessary to extricate the instrument, the surgeon resolved at once to make an incision, like a button-hole (*boutonnière*) of the penis, and executed it with his usual skill, at the spot where the point of the instrument was felt. He extracted the fragment by this opening, after which he was able to withdraw the instrument. The calculus was found firmly fixed in the opening of one of the branches. The patient remained in the hospital for about ten days, after which he left it, not choosing to submit to another operation, and probably retaining in his bladder some remains of the calculus.

We ought not, then, in lithotripsy, to try to extract a fragment without first crushing it; for the instrument cannot be withdrawn from the bladder unless it is perfectly closed; and in order to withdraw it without injuring the parts, we are instructed first to replace the hammer. Students who practise lithotripsy are aware of this; for in the dead body, whenever they try to withdraw the *brise-pierre* partly shut, or not completely replaced, it is always stopped in the passage of the urethra. This practice can only be justified in a certain degree when the operator employs the pincers having three branches; and then he must be sure that the fragment is not large. As to the artificial opening in the penis, we cannot tell beforehand whether it will heal without leaving a fistula or not. The accident of M. Roux will show the importance of disengaging the instrument before withdrawing it. A similar accident happened at Berlin a few years ago, and we believe the writer might have added, in London also.—*London Med. Gaz.*, April, 1837, from *Gazette des Hôpitaux*.

39. *Compound Luxation of the Humerus.*—This is a very rare accident. Sir Astley Cooper has met with but two instances; and Mr. Samuel Cooper, in his Surgical Dictionary, mentions only a single example of it.

So few cases being on record, a notice of one recently communicated to the *Lancet*, (4th March, 1837) by Mr. P. T. Scott, may prove interesting. The subject of this case was a farmer, 14 years of age, who was thrown from a horse, and, owing to the halter being wound round his fore-arm, was drawn on the ground for the space of ten yards. When seen by Mr. T. and Mr. Mallard, forty minutes after the accident, the os humeri was lying exposed on the anterior part of the chest, over the pectoral muscle of that side. An immense quantity of blood had been lost through the wound in the axilla, and the integuments were greatly lacerated. Amputation was at first thought necessary, but Mr. Thompson, who was called in consultation, being of opinion that the limb might be saved, reduction was attempted and accomplished in the usual manner with great ease. Lint was placed in the axilla to cover the wound; a roller was passed around the body, including the limb, and the fore-arm was suspended by a handkerchief, after which the patient was put to bed, and a composing draught was administered. It could be unnecessary to give the daily progress of the case; suffice it to say, that the antiphlogistic regimen being enforced, very little fever, or inflammation, followed. In a fortnight a small collection of pus took place, which was gradually absorbed. From this period no untoward symptom was manifested, the wound being cleaned, and simple dressing applied daily. In two months, by generous

diet, he recovered strength sufficient to go out; and in less than three months walked every morning to our surgery, a distance of three miles, to have attention paid to his wound, which was then very small, and disappeared entirely in a fortnight. The fore-arm until that time had been supported by a splint and sling, which were now laid aside, as the elbow-joint was moved with difficulty; but passive motion, together with the use of stimulating liniments, soon restored to him its proper use.

He now, Mr. Scott, states, thirteen months from the time of the accident, possesses as useful a shoulder as at any period prior to the injury; its motion not being impeded, except so far as regards inability to raise his arm over his head.—*Lancet*, for March 4, 1837.

OPHTHALMOLOGY.

40. *Treatment of some forms of acute Ophthalmia by the application of successive Blisters upon the Cutaneous Surface of the Eyelids.*—The sudden disappearance, on the occurrence of erysipelas of the face, of some forms of ophthalmia, which had long resisted the usual means of treatment, first led M. VELPEAU to the use of blisters in ophthalmia, applied as near as possible to the inflamed part, and therefore upon the eyelids. The advantages resulting from their use, were found to be very considerable, and to be most evident in those cases where the inflamed vessels were not the same as those the action of which was increased by the use of the blisters; thus, e. g. inflammation of the cornea, the vessels of which are derived from the ciliary branches of the ophthalmic artery, is more benefitted by blisters than inflammation of the internal surface of the eyelids, which are supplied by the palpebral branches, and which are directly acted upon by the new cause of irritation. M. Velpeau therefore thinks that blisters applied upon the eyelids will be of the most service in those cases where the inflammation is nourished by the muscular branches of the ophthalmic artery, the ciliary and central of the retina. M. Velpeau has now employed blisters in these cases more than fifty times. In no case have they increased the evil which they were intended to remedy, they have not increased the pain, they leave no indelible marks upon the face, and the only evil effect which has been observed to follow them, is an occasional sty.

The immediate advantages following blisters in such cases, are: diminution of headache, if it previously existed; diminution of lachrymation and intolerance of light, of redness and thickness of the ocular conjunctiva; cleansing of ulcers; lessening of the cloudiness and suffusion of the cornea and aqueous tumour, of effusions of pus or lymph, or at least a discontinuance of their formation, together with improvement in the general state of the patient.

But in many cases, there is a class of secondary effects, which do not clearly manifest themselves before the blistered surface begins to heal. Of these, the most remarkable is the diminution of the cloudiness of the transparent parts of the eye. If lymph be deposited at the bottom of an ulcer; in the substance of the cornea; under the form of hypopium; in layers or masses, it is equally under the power of the blister, disappears as it were by enchantment; so that the clarification of the cornea and aqueous tumour appears to be the special object of the blister. Another effect, almost as constant but not so rapid as the preceding, is the extinction of inflammation in the conjunctiva, then in the cornea. If there is chemosis, this gradually diminishes. Should ulcers be formed on the cornea, when the inflammation is calmed, there will require other remedies to hasten their cicatrization. Blisters applied in front of the orbit are not beneficial in all forms of ophthalmia. They are of especial advantage in favouring the absorption of matters which tend to obscure the clearness of the transparent media of the eye; and their use is indicated in acute inflammations, foreign to the eyelids; in inflammations of the various tunics of the eye, and of the parts contained within the orbits. In ophthalmias which are seated in the fibro-serous tissue of the eye, i. e. in rheumatic ophthalmias, the effects of blisters are more complete than in any other cases, whatever may be the intensity of the inflammation. No topical application is so efficacious. The disease is, as it were, extinguished be-

neath the blister, and ordinarily disappears entirely by the use of one or two blisters in the space of from eight to fifteen days. The catarrho-rheumatic ophthalmia is still more under the influence of the blisters, applied upon the eyelids. M. Velpeau concludes his paper by hinting at the possible advantage to be derived from blisters in the earliest period of cataract; he grounds the idea of their possible utility, on the influence which they appear to possess of restoring those parts of the eye which have become cloudy, to their natural transparency; but the notion is supported by no facts.—*British and Foreign Med. Rev.*, from *Journal des Connaissances Médico-Chirurgicales*. September, 1836.

41. *Professor Rust's method of operating for Cataract by reclinatio*n.—When Professor Rust was a student at the University of Krakau, he became acquainted with an empiric who was celebrated for his success in operating for cataract, although totally unacquainted with the anatomy of the eye, or the general principles of surgery. This man operated with a *round* needle, mounted on a clumsy, metallic handle; yet seldom his cases presented those secondary accidents of inflammation, &c., under which the operations of more skilful surgeons so often fail. His acquaintance with the young student gave him an opportunity of acquiring the anatomical knowledge in which he was deficient, and after a retirement of some months he sallied forth on another campaign, proud in his increased knowledge, and armed with fine, double-edged needles of the most approved construction. But the quack's good fortune had forsaken him; his operations were now followed by a multitude of accidents which he had never before witnessed, and several of his patients lost their eyes from inflammation and suppuration. Under these untoward circumstances, he prudently determined to abandon the path of science, lay aside his double-edged instruments, and resume his old, clumsy, blunt, needle. His operations were then as successful as they had been in the first instance. The reflective mind of young Rust was excited by this remarkable coincidence, and he soon discovered that the whole secret depended on the man's employing a *round* needle, which never produces the same degree of irritation as the cutting needles employed by most surgeons. Further experience confirmed the truth of this fact, and led Dr. Rust to propose the following method of operating, which he has since practised with so much success himself.

Method.—The instrument used by Professor Rust is a fine, round needle, flattened a little at the point only, for the purpose of penetrating the tunics of the eye, but not broader here, or double-edged; half the blade, next the handle, is gilt, or otherwise stained, that the operator may be able to judge more accurately how far the needle penetrates into the eye. The patient's head being properly placed, and fixed by an assistant, the operator depresses the under eyelid, and having placed his needle a little in front of, and parallel to, the cornea, with the point corresponding with the centre of the cataract, he thus estimates how much of the blade must penetrate the eye before the point can reach the centre of the lens. Having well calculated this, he passes the point of his needle into the conjunctiva (in a direction which would traverse the optic nerve if continued,) about one line behind the edge of the cornea, and from half to a whole line below the transverse diameter of the eye, and sinks it into the eye until it has reached the depth calculated on after the first manœuvre. The handle of the instrument is now directed backwards, which brings the point forwards, and makes it penetrate to the depth of half a line; the posterior surface of the capsule, and the middle of the lens, is at the back part. Having thus penetrated the lens, it remains to recline it, which Professor Rust executes by simply turning the handle of the needle, and bringing it a little back; in this way the anterior surface of the lens is directed outwards and downwards; its posterior surface inwards and upwards; its upper edge forwards, and its under one backwards. The operator now endeavours to push the depressed and reclined lens backwards and outwards, by bringing the handle of the needle forwards and a little inwards towards the nose; this done, he withdraws the instrument in the direction it has now assumed. Unless the latter precaution be taken, we run the risk of bringing the lens again forwards; to prevent which, when the operation is finished, Professor Rust sometimes dashes cold water suddenly against the patient's face, while he himself holds the needle fixed in the direction judged most convenient; the patient suddenly draws back his head, and in this manner withdraws the lens from the point of the needle.

The operation now described has the advantage of being extremely simple, and is seldom followed by any secondary accidents; the ciliary processes are uninjured, and as the capsule is opened, the chance of the lens being absorbed is much increased.

The operation of Dr. Rust is liable to two objections; First, that the operator cannot see what he does when once the point of the instrument is introduced. However, this is of less consequence, since the depth to which the needle penetrates can be estimated with so much accuracy. Secondly, that simple reclination of the diseased lens is never sufficient to produce absorption of that body, which must be moved to and fro in the vitreous humour. In the uniform success which attends Professor Rust's method of operating, is to be found the best answer to this latter objection.—*Lancet*, for March 11th, 1837.

MIDWIFERY.

42. *On the length of the Umbilical Cord and its mechanical influence upon Parturition.*—Our *Dublin* cotemporary for March last, contains an interesting paper on this subject by Dr. F. CHURCHILL, Physician to the Western Lying-in Hospital. After noticing contradictory statements of writers on the subject, the author quotes the observations of Dr. Adellmann of Fulda, and Professor Henne of Königsberg.

Out of 49 cases Dr. Adellmann found that in 3 cases the length of the cord was 14 inches; in 6 cases 15 inches; in 12 cases 16 inches; in 1 case 17 inches; in 17 cases 18 inches; in 4 cases 19 inches; in 5 cases 20 inches; in 1 case 21 inches.

Out of 130 cases Professor Henne found that in 1 case the length of the cord was 13 inches; in 7 cases 15 inches; in 2 cases 16 inches; in 4 cases 17 inches; in 10 cases 18 inches; in 8 cases 19 inches; in 16 cases 20 inches; in 11 cases 21 inches; in 21 cases 22 inches; in 9 cases 23 inches; in 13 cases 24 inches; in 8 cases 25 inches; in 3 cases 26 inches; in 4 cases 27 inches; in 4 cases 28 inches; in 1 case 29 inches; in 2 cases 30 inches; in 3 cases 31 inches; in 1 case 32 inches; in 2 cases 34 inches.

For his own satisfaction, and as a test of the correctness of the authorities, Dr. C. had the funis of the child measured in every case attended from the Lying-in Hospital, and the following is the result:

Out of 212 cases, he found that in 6 cases the cord measured 12 inches; in 1 case 13 inches; in 7 cases 14 inches; in 7 cases 15 inches; in 15 cases 16 inches; in 4 cases 17 inches; in 75 cases 18 inches; in 10 cases 20 inches; in 4 cases 21 inches; in 9 cases 22 inches; in 49 cases 24 inches; in 2 cases 26 inches; in 5 cases 28 inches; in 1 case 29 inches; in 8 cases 30 inches; in 1 case 34 inches; in 5 cases 36 inches; in 1 case 46 inches; in 1 case 48 inches; in 1 case 54 inches.

Thus, out of 391 cases, there occurred six of one foot long, and none under that length. The length which occurred most frequently was eighteen inches, and the next in frequency two feet; so that the estimates of authors are not quite correct. There is but one example in the whole number of a cord exceeding forty-eight inches.

"We may conclude, I think," says Dr. C., "that cords only ten inches long must be comparatively very rare, (although I have quoted the record of four such,) since not one occurred out of 391 cases. Now, as to the practical effects of these unusually short cords, it should be borne in mind, that (in head presentations) as soon as the breech passes through the lower outlet, all stress upon the cord may be and is taken off by the child's lying with its abdomen close to the vulva; and that the length required is such as will reach from the insertion of the placenta to the vulva, and from the breech of the child, when at the vulva, to its umbilicus. A cord of this length will, it is clear, allow the child to be born safely. What, then, is this length? I have recorded four observations of different authors, in the former part of this paper, of children being delivered without accident, whose cords were only ten inches long. But suppose in these cases that the placentæ were not situated at the most distant point of the uterus, that they were inserted into the side instead of the fundus, we may allow three inches more as the limit of the length necessary, and finally conclude, that a cord of thirteen inches long

will always suffice for the delivery of the child, and that one of ten will also, under favourable circumstances.* This calculation entirely refutes the notion of delay in labour arising from this cause, unless, at least, the cord be under ten inches, and I am not aware of any example of this being on record."

Out of 190 cases, the cord was round the neck in 52, or in more than one-fourth. The shortest cord which was coiled round the neck, was eighteen inches. This occurred but twice in 75 cases. It was never under two feet when coiled twice round; nor under three when coiled three times round. It was coiled four times round in one of three feet; and four times in one case of fifty-four inches. Whenever the cord exceeded two feet in length, it was generally round the neck. Deducting the length of the coil in the shortest cord, and thirteen inches will be left, which, as has already been shown, is amply sufficient for delivery. Thus, even in the most unfavourable instance, there would be no mechanical interference with parturition, nor any danger to the child. Where coiling was observed most frequently, (twenty-four inches,) the part remaining free was equal to the length of an ordinary cord, and such was the fact when the cord was twisted more than once round. It appears, therefore, that the coiling round the neck is a consequence of the excessive length of the funis, and that the number of coils is in proportion to that length.

As to the practical application of these observations, a few words will suffice. By almost all authors we are impressed with the necessity of untwisting the coil around the neck, by slipping it over the head or shoulders, in order to give the child the benefit of the full length of the cord. In many cases this is very difficult; in some, it is impossible. We have seen that in by far the majority of instances this is perfectly unnecessary, as no evil consequences can follow, there remaining, allowing for the coil, an adequate portion of the cord free. The cord should in all cases be drawn down a little, to relieve the stress upon it, and to loosen the part round the neck; but, except in a very few cases, more will not be necessary.

43. *Case of Extra-uterine Pregnancy, which occasioned a complete retroversion of the Uterus, and did not terminate fatally.* By Professor DREJER.—Communicated to the Royal Medical Society of Copenhagen, on the 21st of February, 1833.

A woman, aged 36, of a thin and slender make, who in her 19th year had given birth to twins, and subsequently to two other children, the last of which was born 13 years before, was seized in June, 1831, after having passed one menstrual period without the occurrence of the usual discharge, with a violent spasmodic attack, attended with loss of consciousness. Antispasmodic medicines were administered, under the use of which she soon recovered. After the lapse of several months, during which the catamenia still continued absent, the epileptic paroxysm recurred, for which she was again successfully treated with antispasmodics. At this period the abdomen was tumid, and the breasts enlarged, and she had no doubt that she was in the fourth month of pregnancy. Her health continued tolerably good until the 25th of November, when she applied to Dr. Drejer on account of crampy pains in the belly and thighs. She was feverish, and had quite the appearance of having attained the 7th month of pregnancy; the breasts contained milk, and the movements of the child were perceptible. The symptoms of which she complained were relieved by pulvis refrigerans conjoined with musk, but some days afterwards suppression of urine came on, attended with straining and violent pain, and it was found exceedingly difficult to introduce the catheter, the orifice of the urethra being completely behind the pubis (a circumstance, as Dr. Neuerman remarks, which is regarded by Mende as a characteristic sign of retroversion of the uterus). By holding the instrument in a direction nearly perpendicular, it was at length passed into the bladder, much dark-coloured urine was drawn off, and alleviation of the symptoms followed. On examination through the vagina and rectum, the uterus was found to be completely retroverted; the os tinæ, raised above the pubis, could scarcely be reached by the finger, and a tumour was felt occupying the posterior part of the pelvic

* It will be seen that in this calculation I am assuming that the head presents. A breech presentation would certainly require a greater length of cord, and in some cases might occasion some difficulty, and require division of the cord before the entire expulsion of the child. But such cases must be very rare indeed, since I have not met with a single example on record.

cavity; it had somewhat compressed the rectum, and yielded little to pressure in consequence of a superincumbent weight. Dr. Drejer was at first inclined to believe that his patient was not pregnant, but was convinced of the contrary by distinctly feeling the movements of the child through the abdominal parietes, and as it was clear that the tumour in the pelvis was the fundus uteri, and that it was impossible the os tinæ could occupy such a situation at the period of gestation to which this woman had arrived, he inferred that the case was one of extra-uterine pregnancy.*

The urine was drawn off twice a day, the accumulation of fæces obviated by the use of Glauber's salt, and, at the end of 14 days, the fundus uteri had evidently ascended towards the sacral promontory, and the os tinæ was somewhat lower; the excretions also were passed without assistance, and in the course of another fortnight, the uterus had nearly resumed its normal position. Gradually the movements of the child ceased. In January, 1832, she had painful bearing-down efforts, accompanied by uterine hemorrhage, but these symptoms vanished in a few days, and she at length so far regained her health as to be able to leave her bed, complaining only of weakness. In February, at the period when she had calculated on being confined, violent hemorrhage and bearing-down pains again came on, but they ceased as before in the course of a few days, after which the distension of the belly and breasts diminished. The hard tumour, which still remained in the abdomen, extended from the symphysis pubis to beneath the false ribs on the right side, where Dr. Drejer believed he could feel the breech of the fœtus, the head appearing to lie below, and the back along the right side and anteriorly; a position which led to the supposition that the fœtus was sacculated in the abdomen, and not contained either in the right ovary or its fallopian tube. In April the catamenia appeared, and afterwards continued to recur at regular intervals; the woman is now in good health, attends to her business, makes long journeys on foot, and is not incommoded by the tumour farther than that it is occasionally the seat of shooting pains, particularly during the menstrual periods. She is also subject to hysteria. She was made acquainted with her situation, and assured that she might, notwithstanding, reach an advanced age.—*Med. Chirurg. Rev.*, January, 1837.

EPIDEMICS—INFLUENZA.

44. *Influenza*.—This affection, which we noticed in our preceding number as having prevailed last winter in certain parts of Europe, seems to have had a very extensive range. It is said to have made its appearance at Sidney, New South Wales, early in October, 1836, and at the Cape of Good Hope on the first of the succeeding month. It broke out in the northern parts of Scotland before the end of the year, and was prevalent somewhat earlier in the countries bordering on the Baltic; so that its occurrence there and at New South Wales was cotemporaneous.

Our readers are in possession of pretty full descriptions of the epidemic as it appeared in England, and we shall now lay before them the best accounts, that have reached us, of the phenomena it presented in France, Belgium, and Denmark.

45. *Influenza in France*.—*La Lancette Francaise*, of the 28th of February last, contains a highly interesting lecture by M. ANDRAL, on the epidemic, as it appeared in France, from which we extract the following observations:

The disease occurred at all ages and in both sexes. There were few cases, however, in children under two years; a large number of twelve years were attacked, but the greater number of those affected were adults; old persons were not exempted from it; it has been observed in individuals of 85 years of age. It

* Dr. Drejer does not seem to be aware of the fact that the uterus may remain in a certain degree of mal-position, with the os uteri still directed to, or raised above the pubis, even to the end of gestation. A case related by Dr. Merriman in the *Med. and Phys. Jour.* Vol. XVI. page 388, would convince him of this. We do not, however, impugn the accuracy of his diagnosis.—R. THACKER.

occurred among all ranks and conditions of society, and in every locality. It was not observed to be more prevalent or severe in populous or crowded situations, or where the rules of hygiene are less observed than in those quarters of the city inhabited by the rich. In one house sometimes a single individual was affected, all the rest escaping the disease; this, however, was very rarely the case. In other dwellings all the inhabitants have been attacked, either simultaneously or successively. A very striking feature of the influenza is a certain disturbance of enervation, especially of sensibility and motility, and more rarely of the intellect. From the very onset there is pain of the head, which oppresses the patient, and almost prevents him from moving the part. It is chiefly felt about the centre of the forehead, and is of a lancinating character, and accompanied with a sensation of heat or of extreme pressure, with a sense of stupor and vertigo. Some patients are so much affected by it, as to declare if it continues they shall perish of a brain fever or an attack of apoplexy. The face at the same time is red, the eyes injected and watery; the ears are the seat of a distressing humming sound. Some patients complain of a prickling in different parts of the surface, especially of the palms of the hands, which in many cases present nothing remarkable to the sight or touch, while in others they are red, swollen, and erythematous, particularly towards the junction of the last phalanges with the metacarpus. In others the pain was less superficial, darting through the substance, as it were, of the limbs; in others the pains were of a contusive character, and principally felt about the larger joints. The pains in general were experienced from the onset of the disease. The pain of the head and stiffness of the limbs, were in many cases the only symptoms that the patients experienced; in other cases, there was in addition, a sense of contraction of the chest, preventing a full dilatation of its parietes, and threatening suffocation; the latter phenomena did not assume in any case a very alarming aspect.

In almost every instance there took place a sudden depression of the muscular strength, which continued often during the whole course of the disease, and persisted even after the disappearance of the other symptoms. Very painful and distressing cramps occurred in some cases, but happily in very few. The intellect, excepting in a very few instances, presented nothing remarkable; the patients were, it is true, greatly depressed, but otherwise their mental faculties were in no degree impaired. In some who suffered from intense febrile excitement a temporary delirium was observed. Sleeplessness was in a great number of cases very obstinate.

In the greater number of cases the tongue was broad, humid, and covered with a whitish coating; in some, however, it was red and dry. The posterior part of the fauces presented nothing remarkable. The pain in the throat of which the patient complained had not its seat in the pharynx, but in the air passages. Deglutition was always easy. The appetite failed during the febrile stage, and this inappetency often continued after the removal of the other morbid phenomena. There was in general but slight thirst. Some patients experienced a sense of weight at the epigastrium, but rarely intense pain. The abdomen has remained, in by far the greater number of cases, supple and without tenderness. The evacuations by stool were natural; constipation was a more frequent symptom than diarrhœa. In some cases, either as an effect of the disease itself or of its complications, a very obstinate vomiting and a copious diarrhœa, with colicky pains, were observed. This was rarely the case at Paris, but at Passy it appears to have been more common.

The mucous membrane of the nares was in a great number of instances the seat of a mucous flux and of hemorrhages. The latter were frequently slight, but in some cases sufficiently profuse to require the plugging up of the nasal fossæ. The voice was almost always altered. More or less hoarseness, with pain along the course of the larynx and trachea, were characteristic symptoms of the epidemic. Cough was rarely absent; the attack frequently commenced with it; it was very obstinate in some patients, and persisted for a long time after the disappearance of the other symptoms. It frequently occurred in paroxysms, which were very painful and fatiguing. It was sometimes dry, and at others accompanied with an expectoration of a gluey, whitish and transparent matter, containing globules of air. In some cases the sputa were more consistent and opaque, and resembled those we observe towards the termination of an acute

bronchitis. In such cases the cough continued for a longer period; it was occasionally accompanied with a sense of strangulation so intense as to seem to threaten asphyxia. The cough had its origin in the larynx and trachea, and rarely proceeded from the bronchi. Thus, in by far the greater number of instances, auscultation and percussion of the thorax gave only negative indications. In some cases, nevertheless, an engorgement and thickening of the mucous membrane was shown to exist by a dry and sonorous rhonchus.

Sometimes the respiration was normal; at others, there was great dyspnœa. In some cases the impediment to respiration arose from a very acute pain in the parietes of the chest, which prevented its dilatation. When the dyspnœa was severe, there took place an alteration of the features to a greater or less extent, with violet tint of the face and coldness of the extremities. But these symptoms were soon removed by energetic treatment. Death never resulted from them. The oppression of the chest increased considerably where a secondary inflammation of the pleura and of the lungs has manifested itself. It is proper to notice as another cause of dyspnœa, the pseudo-membranous inflammation of the bronchii pointed out by M. Nonat. This is by no means rare, and it would be more commonly detected if greater care were taken to examine the final ramifications of the bronchii. In old persons a very profuse secretion took place from the bronchial mucous membrane, which could not be expelled by the cough, and gave to the case all the characteristics of catarrhus suffocativus.

In a few instances the influenza was unattended with fever; but in the greater number of cases the skin was hot, occasionally dry, but more frequently moist; the pulse was frequent, developed and rebounding; the action of the heart being strong and energetic. The fever continued from two to five days; it rarely lasted beyond the latter period; when it shows itself after the fifth day, we should suspect an inflammation of the bronchi or some other portion of the respiratory apparatus. In some patients a singular tendency to lypothemia and syncope was observed. The perspiration was in some cases very abundant; it commenced with the fever, continued during its presence, and persisted after its cessation. The abundance of the perspiration recalled to our memories the *sweating sickness*. Sometimes the surface presented only a simple moisture; in a certain number of cases a very copious discharge from the skin occurred about the second or third day, at the period when the febrile excitement ceased. The perspiration was occasionally accompanied with a miliary eruption.

We may distinguish in the course of the influenza three periods. The first, which is seldom wanting, is characterized by cough, pain in the throat, cephalalgia, and contusive pains in the limbs. Cough and pain in the throat, of themselves, do not constitute a real case of the disease; there must exist at the same time the several nervous symptoms already referred to. In difficult cases, nervous, thoracic or abdominal symptoms may predominate. The duration of the first period is from one to two days; when it is wanting the disease commences with the second or febrile period. This is characterized by fever, accompanied with most of the symptoms which we have described as its concomitants. This period succeeds often in an insensible manner to the former, but more generally it occurs suddenly, either subsequent to, or without being preceded, by the first. The cephalalgia augments as well as the debility and prostration; some patients are struck down, as it were, by lightning, either while walking or attending to their usual occupations. This period continues for about the same period as the fever of measles or scarlatina.

The third period, called apyretic, is distinguished by the cessation of fever, but generally certain of the morbid phenomena of the proceeding periods persist; these phenomena have especial reference to the functions of the central thoracic and abdominal organs. Thus we have pain of the head, and depression; and a cough, which continues, in general, for a considerable period. Although in the preceding stages the stomach presented no indications of disease, we find not frequently that its functions are disordered. The tongue is covered with a thick coating; the mouth is pasty and bitter; the thirst is considerable. If the patients partake of food, it appears to them to have a disagreeable taste; after its ingestion the stomach swells and becomes the seat of a disagreeable sense of weight; with these symptoms constipation of the bowels is usually conjoined. The duration of the third period is very variable; it sometimes termi-

nates at the end of two or three days, at others it continues for a longer or shorter period.

In Paris, during the epidemic of the present spring, the influenza terminated favourably in the great majority of cases. Where death occurred, it was the result of complications, such as pneumonia, general bronchitis, &c. It was, however, a very serious disease when it attacked those labouring under chronic inflammation of the chest.

Dissection has not discovered in the bodies of those who died of the disease, other lesions than those referable to the disease with which the influenza was complicated.

M. Andral does not consider the influenza to be either a laryngitis, tracheitis, or pulmonary catarrh; either of these affections may occur in patients labouring under the disease, and constitute one of the principal elements of the disease, but they do not constitute of themselves the influenza. This is a general disease, the nature and course of which, as in most of the epidemic affections which occur at variable intervals, are both unknown.

The treatment will vary according to the symptoms. When indications of cerebral congestion, with more or less febrile excitement present themselves, we should not hesitate to open a vein, and at the same time apply revulsives to the extremities. If the fever is moderate, the pain in the head inconsiderable, and the oppression slight, rest and diluent drinks will be sufficient. If the mouth is pasty or bitter, the tongue foul, and more or less aversion from food is present, with a sensation of weight at the epigastrium, emetics 18 to 24 grains ipecac. or two of tartar emetic, may be given with great advantage. If the cough is dry, painful, and fatiguing, narcotics, as belladonna and opium, should be prescribed.

If in the second period any particular symptom manifests itself, we should insist upon an attention to regimen, and the use of mucilaginous drinks. In the third period, if the symptoms of stomachic or intestinal disorder predominate, vomits, or still better, purgatives will succeed in removing it. During convalescence, it has been found necessary to restore tone to the stomach by the use of bitters and tonics.

46. *Debate in the Academy of Medicine of France relative to the Influenza.* February 14, 1837.—M. LEPELLETIER de la Sarthe, having charge of the *Bureau Central*, and supplying the place of one of the physicians of the *Hotel-Dieu* who is sick, has had an opportunity of treating a large number of patients afflicted with the epidemic: the number in twenty days amounted to 1050. Besides its occult cause, the epidemic principle, M. L. recognises also as causes of the influenza, atmospherical variations, and particularly cold combined with moisture. He conceives the disease to depend essentially upon an inflammation of the bronchial mucous membrane, but distinguished by a certain nervous affection—constituting a spasmodic bronchitis. The disease may assume various forms, but it is easy to discover in all cases the same leading concurrence of symptoms. Of itself the influenza is always a benign disease; when more serious symptoms develop themselves these are referable to some complication. In two hundred cases of influenza, M. L. observed twenty-five of pneumonia, two of pleurisy, three of gastro-enteritis, two of acute rheumatism, and two of parotiditis. He has seen a phthisical patient suffocated upon the attack of spasmodic bronchitis and die asphyxiated—the same has occurred in many old persons labouring under catarrh. The influenza may assume a very serious character in apoplectic subjects, which is explained as well from the cerebral congestion caused by the cough as from the prescription, as it were, of blood-letting in this disease. The complication the most frequently fatal is pneumonia or pleurisy, more especially as blood-letting, although strongly indicated, in such cases, has not the same advantageous effects as under other circumstances. M. L. has found the use of emetic tartar in large doses with bleeding, to be the most efficacious treatment in such cases. He has also found advantage to result in old persons affected with catarrh from the employment of the white oxyde of antimony. M. L. was struck with the tolerance exhibited for the tartar emetic; of eighteen patients to whom it was given in large doses, two only vomited.

M. Louyer Villermay also regards the influenza as a slight disease. He does not join in the opposition which some physicians evince to the use of blood-let-

ting, from which he has obtained great advantage whenever the pulse was full and developed, and the respiration oppressed, &c. The disease was in that manner cured in three days; the blood presented a firm coagulum, and often a thick buffy coat.

M. Récamier referred to the epidemic of 1803, which was very fatal. The course of the disease was then most frequently by a cutaneous inflammation. M. R. regards the influenza as an affection of the nature of the eruptive fevers. This opinion is not founded merely upon the phenomena of the epidemic of 1803, but upon the concurrence of symptoms which are analogous in the two classes of disease. The catarrh common to influenza is in effect the *cattarrhe tuniculeux* of scarlatina; and if in 1837 the cutaneous eruption was not general, very often an erysipelatous redness was observed, and pustules of the lips were invariably present. Finally, it is known that in the eruptive fevers, the eruption does not always occur, but that the *nature* of the disease is not in consequence changed. The eruption, besides, may take place in the interior; this was the case in 1803, when the digestive mucous membrane, as well as the exterior of the body was the seat of the eruption. The internal eruption had all the characteristics of the lesion so well described by Rœderer and Wagler. Whenever an epidemic prevails with any degree of severity, it always leaves after it indelible traces; thus since the epidemic of 1803, M. R. has seen an increase of the intestinal eruptions. M. Récamier distinguishes in the phenomena of influenza the leading forms: in the first, the inflammatory form, the persons affected are generally strong and robust, with a hard resisting pulse, there is acute pain of the head, difficult respiration, and the base of the chest being, as it were, bound with a cord. In this form bleeding is loudly demanded. M. R. has repeated it from four to six times, and he has seen the blood become more and more coagulable in proportion as the bleedings were repeated, a character different from what is observed in pleurisy and pneumonia, and which seems peculiar to influenza. In the second form, the bilious, there is a bitter taste in the mouth, the tongue is white, pasty, and covered with a mucous coating; the pulse has neither form nor resistance; the disease principally affects the digestive organs. Here emetics are indicated and their effects are immediate. M. R. has seen all the symptoms disappear in twenty-four hours under this treatment. Purgatives are much less efficacious, which is easily understood, inasmuch as the emetic, besides the evacuation it produces, causes also diaphoresis, which is the genuine crisis of the disorder. The third form of influenza M. R. terms the nervous. There is here extreme nervous excitement, loss of sleep, transient pains of the limbs and trunk, the pulse is small and depressed; and the prostration of the patient considerable. In such cases bleeding is positively forbidden. M. R. has seen it under such circumstances increase the intensity of pneumonia. Under this form the influenza is a very grave disease; the patients often sink before any means can be employed to excite reaction. What M. R. has found the most successful in such cases is the use of baths.

M. Piorry recognises different phases in the epidemic. He has observed the pulmonary inflammation to extend deeper and deeper, confined at first to the first divisions of the bronchi, it has subsequently reached its final ramifications, which is the grade of the disease now prevailing. M. P. has used, without success, the tart. ant. in large doses in the pneumonia accompanying the influenza, especially in old persons. He has not been more successful in the use of blood-letting even when repeated at short intervals.

M. Bouillaud, without denying a special epidemic cause giving rise to influenza, discovers in the atmospheric constitution a sufficient explanation of its production and propagation. He does not deny but that the epidemical diseases in general stamp upon all intercurrent diseases their own peculiar characteristics; nevertheless, he believes that this proposition has been exaggerated. He has not as yet collected a sufficient number of facts to be able to pronounce with certainty upon the particular character ascribed to the pneumonia accompanying the influenza, but perhaps sufficient to show that repeated bleedings have not the same beneficial effect as in common pneumonia. M. B. cited especially the case of a physician 68 years old, in whom bleeding repeated at short intervals quickly cured a pneumonia of the most serious character. M. B. observed that since the invasion of the epidemic more patients had died under his care than there had during the preceding eight months.

47. *Influenza in France.*—We derive the following remarks on this subject from the *Gazette Médicale de Paris* of February 18th, 1837.—“All our practitioners have remarked, that during the last ten days, the epidemic has deviated from its original character, either in consequence of an increase in its intensity or the occurrence of concomitant diseases. Thus, instead of a slight bronchial catarrh presenting the same concurrence of symptoms in all the individuals attacked, we now observe both the original form of the disease, but accompanied by pneumonia of a general character of much greater intensity, and pneumonia of a very severe and invidious grade, accompanied with a tendency to prostration, while in other cases the phenomena of the disease indicate especially disturbance of the digestive organs, or of the nervous system, with a morbid condition more or less alarming, of the whole organism. In place of terminating in a few days with the aid of simple remedies, the disease now requires prompt and active treatment. Bleeding, purgatives, emetics, large doses of tartarized antimony fail often in preventing a fatal termination. The mortality of the disease is, in fact, much more considerable than formerly. M. Bouillaud has lost during the eight last days in his clinical practice, a greater number of patients affected with it than during the preceding eight months.

Are the new pathological forms under which the influenza now presents itself, to be considered as independent diseases, as many members of the Academy believe them to be, or should we attribute the increase in its mortality within the last few days to its being complicated with other more serious affections? This is a very important question, upon the proper solution of which will depend, in a great measure, the plan of treatment it is proper to pursue. We believe with M. Récamier and many other distinguished physicians, that the increased mortality among the sick is caused by the epidemic alone; and this opinion rests upon the following leading considerations:

Almost all physicians have observed that the influenza manifests itself at first by a concurrence of general symptoms which affect the respiratory operation only. Secondarily. The occurrence, in the greater number of instances, of the bronchial form of the disease, has led many to suppose that the pneumonic form was a different or complicated disease. This error results from the supposition recently entertained by some pathologists, that diseases differ decidedly from each other according as they are seated in different parts of the same apparatus. M. Récamier very properly considers the reigning disease to be an eruptive fever, the phenomena and anatomical results of which may occupy any portion of the skin, the presence of the disease not being evidenced merely, however, by its exterior manifestations. An epidemic is a general morbid cause of a specific character, which affects an entire population, and which, when once introduced into the organism, gives rise to symptomatic phenomena variable in character, but referable to one and the same cause. It is the same in relation to an epidemic cause of disease as it is in relation to any specific cause of disease, as scrofula and rheumatism, and particularly morbid causes of a more material nature, as the emanations of lead. Should we consider all the pathological manifestations dependent upon these morbid causes as independent diseases, because they present themselves under different forms or attended with different anatomical symptoms?

It has been already remarked that this question has a powerful influence upon the treatment of the epidemic. If the local phenomena it presents be in effect dependent upon one and the same morbid cause, it is important that they should all be submitted to a general plan of treatment, adapted to their nature, and modified only so far as individual indications may demand. Thus we find the influenza attended in different cases with an affection of the throat, of the bronchia, of the lungs, with gastro-enteritis, or with more general symptoms. In all these cases it is the same disease, or in other words, these different cases present various phenomenal or symptomatic indications of the same morbid condition, or of the effects of a similar cause; and the general treatment adapted to remove this cause should be the same in all, with such variations only as are necessary to fulfil secondary indications.

At the last session of the Academy, several distinguished practitioners detailed their experience in relation to the proper treatment of the epidemic. M. Lepelletier, of Mans, believed that he had observed blood-letting in place of being

salutary, to have a tendency to sink the patients into a state of collapse; he gives the preference to large doses of emetic tartar in the more severe cases. To this treatment eighteen out of twenty cases of the pneumonic form of influenza yielded rapidly. He likewise observed that in such cases tolerance of the emetic tartar was readily established. M. Récamier has had recourse to a mixed treatment, sometimes depletive, at others evacuant, and at others narcotic, according as certain indications presented themselves, resulting from the difference of the morbid phenomena in different cases. MM. Louyer Villermay, and Bouillaud appear to have derived advantage from blood-letting. They have not, however, presented results of their practice of so explicit and positive a character as either of the preceding gentlemen. M. Récamier has in fact declared that the cases of pneumonic influenza treated by blood-letting repeated on several successive days, but not repeated several times on the same day, have proved fatal.

When the symptoms of influenza are slight, it is well known that the patient readily recovers with very simple remedies, or even none; but when of a severe, aggravated character, or when the parenchyma of the lungs becomes affected it requires for its removal an active and well directed treatment. The advocates of bleeding have themselves remarked that this remedy does not appear during the prevalence of the epidemic, to produce the same good effects it does under ordinary circumstances. It is difficult to say precisely to what extent bleeding is either injurious or beneficial in influenza, or what are the remedies which should be preferred to it. When the disease is slight it will disappear under almost any treatment; but notwithstanding it may in no case terminate fatally, yet recovery may be more or less rapid and complete according as it is submitted to a treatment more or less judicious. In the commencement of the epidemic the disease was left pretty much to itself, but it being remarked, as it was supposed, that the patients thus treated remained generally in a state of more or less debility, with anorexia of longer or shorter continuance, purgatives were subsequently very generally employed, with the effect of dissipating these remnants of the disease. When administered twenty-four to thirty-six hours after the invasion of the malady, the disease was found to be shortened in its duration, to lose speedily its general symptoms, and to be prevented from changing into a serious affection. Of seventy or eighty patients treated in this manner, all recovered without any dangerous or consecutive symptom. Many of the patients in whom the disease was left to itself at its commencement, were observed to become affected with more serious symptoms, while those who were bled on the first attack did not recover, or very slowly."

48. *Influenza in Belgium*.—According to M. GOUZÉE, the epidemic, as it occurred at Antwerp during the last winter, was of a much more serious character than that which prevailed in either 1831 or 1833. He remarks that the disease was not a simple pulmonary catarrh, modified by the epidemic constitution—it was not an inflammation of the bronchial mucous membrane, notwithstanding a cough was most generally one of the predominant symptoms. The cough when it existed, for it was occasionally absent, had in fact peculiar characters, not common to the cough of catarrh. It was small, superficial, if such an expression may be made use of, occurring without any effort, and fatiguing only by its continuance or the extreme irritability of the patient. It not unfrequently occurred in paroxysms, particularly towards the evening or in the morning; being sometimes dry, and at others accompanied by an expectoration of mucus mixed with serum. Exploration of the chest exhibits no impediment to the free expansion of the lungs. If to the above character we add that the cough is almost instantaneously relieved, as M. G. has frequently observed, by the employment of sedatives,—recollecting that under any circumstances, it is to be viewed as a symptom of little importance, and that it is often entirely absent, we have a right to conclude that it does not depend upon an inflammation of the bronchial mucous membrane, the existence of which is evidenced by no other phenomena of the disease.

Certain symptoms, which occur very generally, such as coryza, pain at the upper part of the larynx, and hoarseness, seem to indicate that the cough may depend upon an irritation of the larynx; but the superficial and fugitive alteration with which those symptoms are connected, appears to M. G. to be merely accessary.

ry and not sufficient to explain the other predominant phenomena which give to influenza its peculiar character. These phenomena he believes to result from a disturbance of innervation, upon which, he is of opinion, the disease chiefly depends.

This disturbance of innervation are, he remarks, strikingly evinced by the phenomena of influenza. Pain of the head is constantly experienced in the commencement especially; it is then frequently confounded with a sense of fulness in the nostrils, extending to the eyes and ears; it is attended with vertigo, with a sort of pressure over the eyes, a singular sensibility of the integuments of the head, sleeplessness, and many times slight temporary delirium during the night. The patients are weak, suffer from an oppression of the chest, pains in the back, joints, and extremities; they are quickly exhausted, and liable even to attacks of complete syncope. To the foregoing symptoms, which are purely nervous, are added, in the commencement of the attack, symptoms of a more or less decided reaction. To these M. G. has frequently to present an exacerbation in the morning, and a remission towards evening. The face is red; the skin hot and moist; the pulse moderately frequent, and, as M. G. has always observed, remarkably soft. He has seen some patients who were young and robust, affected with a profuse epistaxis, which produced but little abatement of the disease. The symptoms of reaction disappear by the second or third day, but a sense of debility persists, which bears no relation to the slight degree and short duration of the preceding symptom. The patients continue to be affected with a lightness of the head, a sense of fatigue, pain, sleeplessness, and return, for a longer or shorter time, of their slight cough, which causes in the thorax a peculiar sensation of fatigue.

The disturbances observed in the digestive organs, the same as those of the organs of respiration, are equally referable to a derangement of innervation. To anorexia and a distaste for animal substances is often joined distressing nausea, vomiting, a sensation of dryness in the mouth, and thirst; nevertheless, the tongue is expanded, moist, and covered only with a slight whitish coating. The pain of the throat, the difficulty of deglutition have their seat in the larynx. M. G. has never found the tonsils swollen. Frequently a slight degree of redness exists at the posterior part of the fauces. The bowels are variable—generally they are costive; but diarrhœa occurred in some cases towards the close of the epidemic.

Many patients complained of an acute pain at the epigastrium and in the hypochondria. We must be cautious not to take these pains for the indications of a gastritis. They are the simple result of the fatigue caused by the cough, which is the more sensibly felt according as the patient is the more weak and irritable; the pain ceases with the cough.

When first attacked with influenza the patients seem to be threatened with a serious disease, nevertheless we need seldom hesitate to promise him a favourable issue. The patient is seized either suddenly, or after having for a few days experienced irregular chills or a more increased susceptibility to cold; but however alarming the symptoms are at the onset, they abate by the second or third day, leaving the patient merely affected with a slight cough, which now often becomes more dry; he remains in a state of feebleness, is easily fatigued, experiences vertigo and a painful sense of pressure over the eyes. But this condition of things has nothing in it to excite inquietude if we except its remarkably long continuance.

In the commencement of the epidemic, the violence of cough and the phenomena of reaction induced M. G. to employ leeches, to the extent of ten or fifteen, applied beneath the clavicles, or of six to eight upon the larynx; but in no case did they cause an amelioration of the symptoms. The only cases in which venesection was resorted to, were those in which there occurred symptoms of bronchitis, pleuritis or pneumonia, and which generally terminated fatally. The treatment was generally confined to the administration of mild and tepid drinks, with confinement to bed in severe cases, pediluvia and diet, to which treatment the phenomena, the most serious in appearance, have promptly ceded. The patients who consented to remain in bed a few days, were much more promptly and certainly cured, than those who merely kept their chamber. M. G. has observed some relapses, these have not been so dangerous as has been asserted; the patients, however, were longer in acquiring their full strength.

The cough which frequently continues during convalescence, becomes a serious symptom in weak and delicate patients. M. G. has seen it, in nervous females, recur in paroxysms of many hours duration, of so violent and painful a character, that the breast appeared to be, as it were, torn, while the patients were sunk into a state of extreme exhaustion. Some large tea-spoonsful of the syrup of lactutcarium, properly prepared, taken as soon as the coughing commenced, have always speedily diminished its violence and caused it gradually to abate. M. G. has also employed in such cases, the powdered belladonna mixed with white sugar, in the dose of a grain, taken about the period when the cough is expected to return, without exceeding, however, two or three grains a day, and in many cases this has removed the cough as it were by enchantment. The water of the cherry laurel, the syrup of the white poppy, and opium he has not found so efficacious. Strengthening aliments, and some degree of exercise, are very proper towards the termination of the disease.

Influenza is not a dangerous disease, excepting when complicated with acute affections of the chest; it may, however, cause diseases of a very prompt and serious nature to become developed in persons predisposed to affection of the chest. It was found to augment in a very decided degree, especially towards the close of the epidemic, the mortality in the Military Hospital and city of Anvers.

Very little disease prevailed during the whole of the year 1836, which was the case also previous to the occurrence of the cholera in 1832. The autumn had been very wet. The first cases of the influenza occurred at Antwerp, about the middle of January, 1837. Females, delicate and nervous persons, in easy circumstances, were the first attacked. The disease soon spread; by the commencement of February nearly the whole population was attacked. By the 15th to the 20th of the month new cases became more and more rare, and about this period there took place a manifest decrease in the disease.

M. G. has seen the influenza in persons of all ages, excepting children under one year. The disease did not exhibit any degree of intensity when it occurred in infants, it was chiefly confined to a slight cough, coryza, running of the eyes, a fever of one day's continuance, and a few days of debility. He has seen it in adults complicated with intense bronchitis, pleurisy, pneumonia, pericarditis, pulmonary emphysema, and irritation of the brain with continued delirium; many of these cases terminated fatally.

A fact worthy of notice was remarked at the Military Hospital; that intermittent fever, previously of tolerable frequency, ceased to present itself during the continuance of the influenza.—*Bulletin Méd. Belge.*, February, 1837.

49. *Influenza at Copenhagen.*—From an account by Professor Otto, of Copenhagen, of the influenza as it appeared in that city, contained in the *Zeitschrift für die gesammte Medicin*, for June, 1837, we extract the following particulars:

The disease made its appearance in Copenhagen about the middle of December, 1836. The epidemic occurred suddenly, and soon after its appearance, simultaneously in St. Petersburg, Stockholm, Berlin, &c. As in all former similar epidemics it was preceded for a long period by damp and cloudy weather, which also continued during the whole time the disease prevailed: unlike the former epidemics, it commenced in the beginning of winter, while they generally occurred in spring. In December, 1835, which was likewise damp and cloudy, there prevailed an epidemic of measles. The influenza spread throughout the city with uncommon rapidity; one family after another became attacked with it in quick succession, not one of those to whom Dr. O. acted as physician escaped it. By the middle of January, 1837, when the epidemic was at its height, it was estimated that thirty thousand individuals were affected with it, though in all probability the number was even greater, as many did not apply for medical aid but followed their usual occupations. No condition, age or sex escaped its attack. Even those who were labouring under other diseases and were confined to their chamber or even to bed were attacked. The epidemic began to diminish towards the end of January; it continued to prevail, however, during the whole of February, and although cases occurred in the beginning of March they presented less of the peculiar symptoms of influenza, and by the 28th of the month nothing but ordinary catarrh was observed.

The disease was frequently ushered in by febrile symptoms but as frequently

without; almost always, however, by a very peculiar loss of strength. The most striking symptom at first was a violent dry cough, sometimes accompanied and at others unattended with a pain in the breast, and hoarseness. There was likewise a discharge from the nostrils, mostly thirst, loss of appetite and pain of the head. To these symptoms there succeeded, in most cases, all the ordinary phenomena of fever, though in many instances no febrile symptoms were present. There was generally some pain of the stomach, coated tongue, nausea, bitter taste in the mouth, &c. They who paid no attention to the first symptom of the epidemic, but went about and attended to their business as usual, experienced in general an augmentation of the cough, defluxion from the nostrils, pain of the head, &c., with symptoms of fever, and were finally obliged to take to their beds; the disease in such lasted often for fourteen days, or even longer. If, on the contrary, on the appearance of the disease, the patient went to bed and took some gentle diaphoretic medicine, all the symptoms frequently disappeared within three or four days. Notwithstanding, however, in this manner the more severe symptoms were often removed or greatly diminished; in most cases the cough and expectoration continued for a long time, in some instances for four to six weeks; the convalescence from the disease was in general tedious, and attended with want of appetite and especially an inexplicable sense of fulness. An imprudent exposure to cold or dampness during convalescence gave rise to a relapse with symptoms of great severity and danger.

The prognosis was almost always favourable. Of the disease under ordinary circumstances no one died; but in those who either were labouring previously under some disease of the chest, or were predisposed to such, or who while affected with influenza in consequence of exposure to cold were attacked with inflammation of the chest, the symptoms were often of a very severe character, and in some cases terminated in death. Old persons in general were in greater danger from the disease than the young, and especially when weakened by the long continued cough and expectoration to which it so frequently gave rise. In children the disease was milder and less dangerous generally than in adults.

The treatment required by the influenza was the same as that proper in catarrh. When attended by foulness of the *prima viæ* the muriate of ammonia was peculiarly advantageous. Bleeding was seldom demanded. Leeches were occasionally resorted to to remove pain of the side. For the long continued cough the Iceland moss was given in many cases, and the debility which remained so long after the disease called for the employment of strengthening remedies and nourishing diet.

Dr. Otto remarks, that the influenza, as it occurred in Copenhagen, appeared to him to exhibit a contagious character.

D. F. C.

TOXICOLOGY AND MEDICAL JURISPRUDENCE.

50. *On the Poisonous Properties of Hemlock, and its lately discovered alkaloid, Conia.*—Professor CHRISTISON has repeated the greater part of the analysis of hemlock lately executed by Professor Geiger of Heidelberg, and had obtained precisely the same results. According to his analysis, hemlock contains a peculiar principle, alkaloidal in its nature, but differing from the previously discovered alkaloids in its form, which is that of an oily-like liquid, volatile at a moderate elevation of temperature, and capable of being readily distilled over with water. It neutralizes acids, without however forming crystallizable salts. It contains a considerable proportion of azote. It quickly undergoes decomposition when exposed to the air, giving out ammonia, and becoming a dark, resinous-like substance.

The discoverer inferred, from a few experiments chiefly made on birds, that this principle, which may be termed *Conia*, from the genus of plant whence it is obtained, possesses active poisonous properties; that it produces coma, convulsions, and depressed action or even paralysis of the heart; and that its poisonous qualities are greatly impaired by combination with acids. The author, however, has been led to conclude, from an extensive set of experiments on the higher orders of animals,—that the effects of *Conia* on the body are increased rather

than diminished by neutralization with an acid, such as the muriatic; that it does not produce coma when administered either free or combined; that it does not act at all on the heart; that it possesses a local irritant action, and that its remote action consists simply in the production of swiftly increasing paralysis of the muscles, ending fatally by asphyxia from palsy of the muscles of respiration. He farther found it to be a poison of exceeding activity, scarcely inferior indeed in that respect to hydrocyanic acid. Two drops applied to a wound, or introduced into the eye of a dog, rabbit, or cat, will sometimes occasion death in ninety seconds; and the same quantity injected in the form of muriate into the femoral vein of a dog killed it in three seconds at farthest. The author added various reasons for doubting the probability of any chemical antidote being discovered; and suggested artificial respiration as the most probable remedy, founded on an experiment in which the heart was maintained in a state of vigorous action for a long time by artificially inflating the lungs.

An abstract was then given of a set of comparative experiments made with extract of hemlock; from which he inferred that the action of hemlock is identical with that of Conia. Very powerful extracts were used, which had been prepared with absolute alcohol from the leaves or seeds. The effects ascribed by some toxicological authors to hemlock were not observed; but simply paralysis, with intermittent slight convulsions. From this identity of action it may be concluded, that Conia is really the active principle of hemlock, or at least contains it in large quantity, and is not the product of chemical action and new arrangements of elements.

Some remarks were appended as to the probable nature of the State-poison used in ancient times, particularly in Athens, for despatching criminals; which has commonly been held to be a preparation of the same plant with the modern *Conium maculatum*. The author shewed, from the descriptions of the Greek *κωνειον* and Roman *cicula*, that this plant could not be the modern *conium*; that the account given by Plato of the effects of the state-poison in the case of Socrates is wholly at variance with the description by Nicander and others of the action of the *κωνειον*; that the effects ascribed to the poison in Plato's narrative are such as no poison whatever which is known at present can produce; and that consequently either Plato's description is an embellished narrative, or the ancients were familiar with a poison of most remarkable and peculiar properties, with which modern toxicologists are no longer acquainted.—*Transactions of the Royal Society of Edinburgh*.

51. *Method of separating small quantities of arsenic from substances with which it may have been mixed.* By JAMES MARSH, of the Royal Arsenal, Woolwich.—Notwithstanding the improved methods that have of late been invented of detecting the presence of small quantities of arsenic in the food, in the contents of the stomach, and mixed with various other animal and vegetable matters, a process was still wanting for separating it expeditiously and commodiously, and presenting it in a pure unequivocal form for examination by the appropriate tests. Such a process should be capable of detecting arsenic not only in its usual state of white arsenic or arsenious acid, but likewise that of arsenic acid, and of all the compound salts formed by the union of either of these acids with alkaline substances. It ought, also, to exhibit the arsenic in its reguline or metallic state, free from the ambiguity which is sometimes caused by the use of carbonaceous reducing fluxes. It appeared to me, that these objects might be attained by presenting to the arsenic hydrogen gas in its nascent state: the first action of which would be to deoxygenate the arsenic; and the next, to combine with the arsenic, thus deoxygenated, into the well known gas called arsenuretted hydrogen. Being thus brought to the gaseous state, the arsenic would spontaneously (so to speak) separate itself from the liquor in which it was before dissolved, and might be collected for examination by means of any common gas apparatus; thus avoiding the trouble, difficulty, and ambiguity of clarification and other processes whereby liquors, suspected of containing arsenic, are prepared for the exhibition of the usual tests, or of evaporation and deflagration which are sometimes had recourse to, in order to separate the arsenic from the organic substances with which it may have been mixed.

I had the satisfaction of finding, on trial, that my anticipations were realized;

and that I was thus able, not only to separate very minute quantities of arsenic from gruel, soup, porter, coffee, and other alimentary liquors, but that, by continuing the process a sufficient length of time, I could eliminate the whole of the arsenic in the state of arsenuretted hydrogen, either pure, or at most, only mixed with an excess of hydrogen.

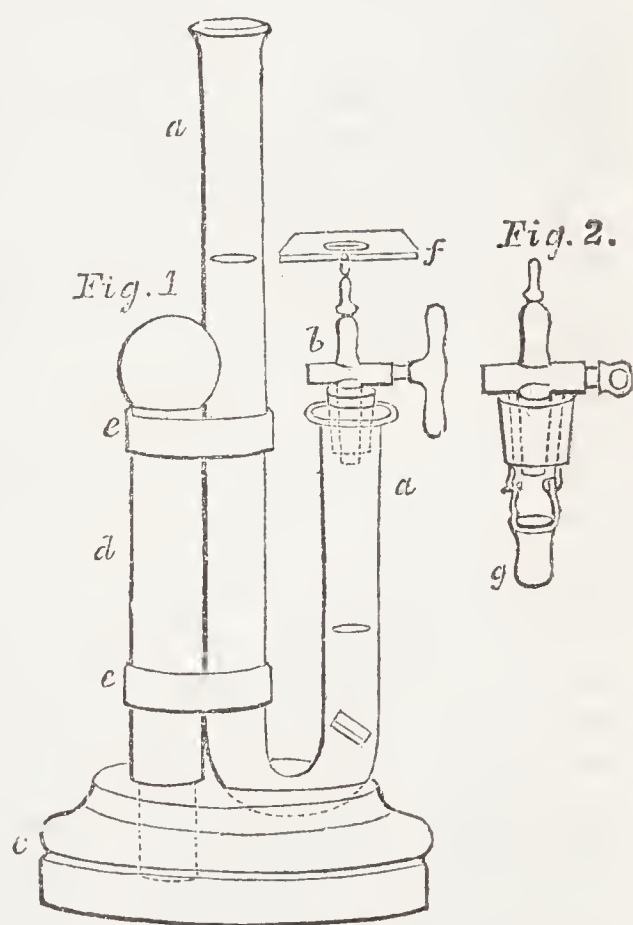
If this gas be set fire to as it issues from the end of a jet of fine bore into the common air, the hydrogen, as the more combustible ingredient, will burn first, and will produce aqueous vapour, while the arsenic will be deposited either in the metallic state, or in that of arsenious acid, according as it is exposed partially or freely to the air. The former condition is brought about by holding a piece of cold window glass opposite to and in contact with the flame, when a thin metallic film will be immediately deposited on its surface; and the latter, by receiving the flame within a glass tube open at both ends, which, in half a minute, will be found to be dimmed by a white pulverulent sublimate of arsenious acid. By directing the flame obliquely within side of the tube, it strikes against the glass and deposits the arsenic partly in the metallic state. In this case, if the tube, while still warm, be held to the nose, that peculiar odour, somewhat resembling garlic, which is one of the characteristic tests of arsenic, will be perceived. Arsenuretted hydrogen itself has precisely the same odour, but considerable caution should be used in smelling to it, as every cubic inch contains about a quarter of a grain of arsenic.

The requisite apparatus is as simple as possible, being a glass tube open at both ends, and about three quarters of an inch in its internal diameter. It is bent into the form of a syphon (*a a*, fig. 1), the shorter leg being about five inches, and the longer about eight inches in length. A stop-cock *b*, ending in a jet of fine bore, passes tightly through a hole made in the axis of a soft and sound cork, which fits air-tight into the opening of the lower bend of the tube, and may be further secured, if requisite, by a little common turpentine lute. To fix the apparatus, when in use, in an upright position, a hole is made in the wooden block *c*, for the reception of the lower part of the pillar *d*, and a groove is cut in the top of the same block to receive the bend of the tube *a a*. Two elastic slips *e e*, cut from the neck of a common bottle of India rubber, keep the tube firm in its place.

The matter to be submitted to examination, and supposed to contain arsenic, if not in the fluid state, such as pastry, pudding, or bread, &c., must be boiled with two or three fluid ounces of clean water, for a sufficient length of time.

The mixture so obtained must then be thrown on a filter to separate the more solid parts: thick soup, or the contents of the stomach, may be diluted with water and also filtered; but water-gruel, wine, spirits, or any kind of malt liquor and such like, or tea, coffee, cocoa, &c., can be operated on without any previous process.

When the apparatus is to be used, a bit of glass rod, about an inch long, is to be dropped into the shorter leg, and this is to be followed by a piece of clean sheet zinc, about an inch and a half long and half an inch wide, bent double, so that it will run down the tube till it is stopped by the piece of glass rod first put in. The stop-cock and jet are now to be inserted, and the handle is to be turned so as to leave the cock open. The fluid to be examined, having been previously mixed with from a drachm and a half to three drachms of dilute sulphuric acid (1 acid and 7 water,) is to be poured into the long leg, till it stands in the short one about a quarter of an inch below the bottom of the cork. Bubbles of gas will soon be seen to rise from the zinc, which are pure hydrogen if no arsenic be present; but, if the liquor holds arsenic in any form of solution, the gas will be arsenuretted hydrogen. The first portions are to be allowed to escape, in order



that they may carry with them the small quantity of common air left in the apparatus; after which the cock is to be closed, and the gas will be found to accumulate in the shorter leg, driving the fluid up the longer one, till the liquor has descended in the short leg below the piece of zinc, when all further production of gas will cease. There is thus obtained a portion of gas subject to the pressure of a column of fluid of from seven to eight inches high: when, therefore, the stop-cock is opened, the gas will be propelled with some force through the jet, and, on igniting it as it issues (which must be done quickly by an assistant,) and then holding horizontally a piece of crown or window glass (*f*, fig. 1) over it, in such a manner as to retard slightly the combustion, the arsenic (if any be present) will be found deposited in the metallic state on the glass; the oxygen of the atmosphere being employed in oxydizing the hydrogen only during the process. If no arsenic be present, then the jet of the flame as it issues has a very different appearance; and, although the glass becomes dulled in the first instance by the deposition of the newly formed water, yet such is the heat produced, that in a few seconds it becomes perfectly clear, and frequently flies to pieces.

If the object be to obtain the arsenic in the form of arsenious acid, or white arsenic, then a glass tube, from a quarter to half an inch in diameter (or according to the size of the jet of flame,) and eight or ten inches in length, is to be held vertically over the burning jet of gas, in such a manner that the gas may undergo perfect combustion, and that the arsenic combined with it may become sufficiently oxydized; the tube will thus, with proper care, become lined with arsenious acid in proportion to the quantity originally contained in the mixture.

When the glass tube is held at an angle of about forty-five degrees over the jet of flame, three very good indications of the presence of arsenic may be obtained at one operation; viz. metallic arsenic will be found deposited in the tube at the part nearest where the flame impinges,—white arsenic or arsenious acid at a short distance from it,—and the garlic smell can be readily detected at either end of the tube in which the experiment has been made.

As the gas produced during the operation is consumed, the acid mixture falls into the short limb of the tube, and is thus again brought into contact with the zinc, in consequence of which a fresh supply is soon obtained. This gas, if submitted to either of the processes before described, will give fresh indications of the presence of the arsenic which the mixture may have originally contained; and it may be easily perceived that the process will be repeated as often as may be required, at the will of the operator, till no further proofs can be obtained.

When certain mixed or compound liquors are operated on in this apparatus, a great quantity of froth is thrown up into the tube, which may cause a little embarrassment by choking the jet. I have found this effect to take place most with the contents of the stomach, with wine, porter, tea, coffee, or soup, and, indeed, with all mucilaginous and albuminous mixtures. The means I adopt to prevent this effect from taking place, or, at least, for checking it in a great measure, is to grease or oil the interior of the short limb of the apparatus before introducing the substance to be examined, or to put a few drops of alcohol or sweet oil on its surface previously to introducing the stop-cock and its appendages. I have however found if the tube be ever so full of froth in the first instance, that, in an hour or two, if left to itself, the bubbles burst, and the interior of the tube becomes clear without at all effecting the results.

In cases where only a small quantity of the matter to be examined can be obtained, I have found a great convenience in using the small glass bucket, (*g*, fig. 2.) Under such circumstances the bent glass tube may be filled up to within an inch of the short end with common water, so as to allow room for the glass bucket, which must be attached to the cork, &c. by means of a little platina wire; a bit or two of zinc is to be dropped into the bucket, with a small portion of the matter to be examined, and three or four drops of diluted sulphuric acid; (acid 2, water 14,) and the whole is then to be introduced into the mouth of the short limb of the tube. The production of gas under this arrangement is much slower, and, of course, requires more time to fill the tube, than in the former case, but the mode of operating is precisely the same. Indeed, it is of great advantage, when the quantity of arsenic present is very minute, not to allow the hydrogen to be evolved too quickly, in order to give it time to take up the arsenic.

A slender glass funnel will be found of service when as much as a table-spoonful, or even a tea-spoonful of matter can be obtained for examination. In this

case, the tube is to be partly filled with common water, leaving a sufficient space for the substance to be examined; a piece of zinc is to be suspended from the cork by a thread or wire, so as hang in the axis of the tube; and the fluid to be operated on, having previously been mixed with dilute sulphuric acid, is then to be poured through the funnel carefully, so as to surround the zinc, avoiding, as far as possible, to mix it with the water below, and the stop-cock and its appendages are to be replaced in the mouth of the tube; the production of the gas then goes on as before stated, and the mode of manipulating with it, is exactly the same as described in the foregoing part of this paper.

It will be necessary for me, in this place, to explain the methods I employ after each operation, to determine the integrity of the instrument, so as to satisfy myself that no arsenic remains adhering to the inside of the tube, or to the cork and its appendages, before I employ it for another operation.

After washing the apparatus with clean water, a piece of zinc may be dropped in, and the tube filled to within half an inch of the top of the short limb; two drachms of diluted sulphuric acid are then to be poured in, and the stop-cock and cork secured in its place; hydrogen gas will in this case, as before, be liberated, and fill the tube. If the gas as it issues from the jet be then inflamed, and a piece of window glass held over it as before described, and any arsenic remains, it will be rendered evident by being deposited on the glass; if so this operation must be repeated till the glass remains perfectly clean, after having been exposed to the action of the gas.

When I have had an opportunity of working with so large a quantity of mixture as from two to four pints, (imperial measure) I have employed the instrument (fig. 3,) which is indeed, but a slight modification of one of the instantaneous light apparatuses, now so well known and used for obtaining fire by the aid of a stream of hydrogen gas thrown on spongy platinum. It will, therefore, be of importance only for me to describe the alteration which I make when I employ it for the purpose of detecting arsenic. In the first place, I must observe, that the outer vessel *a*, which I use, holds full four pints, and that the jet of the stop-cock is vertical, and its orifice is twice or three times larger than in the instrument as generally made for sale, and also that there is a thread or wire attached to the cork of the stop-cock *b*, for suspending a piece of zinc *c*, within the bell glass.

Fig. 3.

With an instrument of this description, I have operated on one grain of arsenic in twenty-eight thousand grains of water (or four imperial-pints), and have obtained therefrom, upwards of one hundred distinct metallic arsenical crusts.

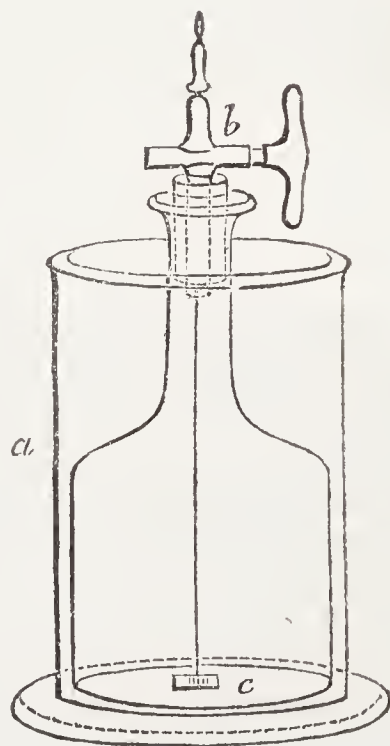
Similar results have been obtained with perfect success from three pints of very thick soup, the same quantity of port wine, porter, gruel, tea, coffee, &c. &c.

It must, however, be understood, that the process was allowed to proceed but slowly, and that it required several days before the mixture used ceased to give indication of the presence of arsenic, and also, a much larger portion of zinc and sulphuric acid was employed from time to time, than when working with the small bent tube apparatus, in consequence of the large quantity of matter operated on under this arrangement.

With the small apparatus, I have obtained distinct metallic crusts, when operating on so small a quantity as one drop of Fowler's solution of arsenic, which only contains one-120th part of a grain.

The presence of arsenic in artificial orpiment and realgar, in Scheele's green, and in the sulphuret of antimony, may be readily shown by this process, when not more than half a grain of any of those compounds is employed.

In conclusion, I beg to remark, that although the instruments I have now finished describing, are the form I prefer to all that I have employed, yet it must be perfectly evident to any one, that many very simple arrangements might be con-



trived. Indeed, I may say unequivocally, that there is no town or village in which sulphuric acid and zinc can be obtained, but every house would furnish to the ingenious experimentalist ample means for his purpose; for, a two-ounce phial, with a cork and piece of tobacco-pipe, or a bladder, with the same arrangement fixed to its mouth, might, in cases of extreme necessity, be employed with success, as I have repeatedly done for this purpose.

The only ambiguity that can possibly arise in the mode of operating above described, arises from the circumstance, that some samples of the zinc of commerce themselves contain arsenic; and such, when acted on by dilute sulphuric acid gave out arsenuretted hydrogen. It is, therefore, necessary for the operator to be certain of the purity of the zinc which he employs, and this is easily done by putting a bit of it into the apparatus, with only some dilute sulphuric acid; the gas thus obtained is to be set fire to as it issues from the jet; and if no metallic film is deposited on the bit of flat glass, and no white sublimate within the open tube, the zinc may be regarded as in a fit state for use.—*Transactions of the Society of Arts*.

52. *Mode of Detecting Acetate of Morphia*.—Drantz, Laine and others, recommend for the detection of this salt in the intestines, that the latter should be macerated in distilled water, the liquid filtered, and evaporated to the consistence of syrup. This extract, when treated by alcohol, gives up acetate of morphia, which may be obtained in the state of crystals by evaporation.—*Journal de Chim. Méd.*, January, 1837.

CHEMISTRY AND PHARMACY.

53. *Iodide of Quinine*.—This is formed by precipitating sulphate of quinine by means of hydriodate of potash. It is a yellow precipitate, soluble in alcohol, and crystallizes from this solution in quadrangular prisms. It is a good deal used for the cure of scrofulous tumours, in cases where iodine and tonics are indicated.—*Journal de Chim. Méd.*, for March, 1836.

54. *Adulteration of Calamine of the shops*.—Mr. R. H. BRETT has analyzed the powder sold in the London shops under the name of *calamine*, and found the constituents to be sulphate of barytes! oxide of iron, carbonate of lime, lead, (probably sulphate,) with mere traces of zinc.—*British Ann. Med.*, for April 21st, 1837.

MISCELLANEOUS.

55. *Manslaughter by Morison's Pills. Another agent convicted*.—Another of Morison's agents, a man of the name of La Mott, residing at Hull, was tried and convicted lately at the York Spring Assizes, for having administered to a Mrs. Russell a quantity of Morison's pills, and thereby caused her death. This case exhibited as gross quackery as any of its predecessors. Mrs. Russell had been a stout healthy woman, but suffered occasionally from constipation. For two years before her death she was in the habit of taking Morison's pills, for what she called "windy dropsy," and a pain in the kidneys. On the 9th August last she complained of illness, and the prisoner was applied to. From that moment the pills were perseveringly administered, until the patient sunk under her sufferings. The morbid appearances of irritant poisoning were found in the stomach, and particularly at the pyloric orifice. The mucous membrane of the intestines was softened throughout. For the defence witnesses were called as usual, who said they had taken the pills with benefit. The prisoner was found *Guilty*, and sentenced to nine months' imprisonment.—*London Med. Gaz.*, March, 1837.

56. *Necrology*.—Science has lost within a few months, Baron DUBOIS, of Paris; Professor CHARLES HIMLY, of Göttingen; Professor DESGENETTES, of Paris; Professor G. R. TREVIRANUS, of Bremen; Professor TURNER, of London; and Dr. HUGH LEY, Lecturer on Midwifery at St. Bartholomew's Hospital.

AMERICAN INTELLIGENCE.

Fracture of the internal right Malleolus, without displacement of the Foot. By the EDITOR.—A man 65 years of age, in a fit of delirium, let himself down from a second story window, and alighted on a cellar door, which was fastened with a pad-lock. He received several slight contusions, and a small superficial wound just above the right ankle on the inner side, probably caused by its striking against the pad-lock. The right malleolus was fractured about an inch from its extremity, the fracture passing obliquely downwards. The fragment admitted of slight motion, and its margins could be well determined. What appears somewhat remarkable is, that there was no disposition in the foot to turn inwards; nor did any such disposition subsequently manifest itself, although the patient was exceedingly restless, and repeatedly drew his leg from the fracture box in which it was placed. The leg and foot are at present securely fixed in a “felt splint” moulded to the limb.

Retention of a dead Fœtus in Utero—expulsion at term. By the EDITOR.—In our number for February, 1836, will be found an interesting case, communicated to us by Dr. I. G. Porter, of New London, Connecticut, in which a fœtus of five months, free from putrefaction, was expelled, at the ordinary term of utero-gestation. A case of a similar description has recently occurred to the Editor. He was sent for in haste, and on his arrival was told that the patient, who had twice previously been a mother, had been seized some hours before with severe labour pains, and that “something was coming away from her.” On examination, we found in the bed, between the thighs of the patient, a small mass, which proved to be an ovum. The fœtus was enveloped in the membranes, and apparently between the second and third month; the placenta was nearly three inches in diameter and three-quarters of an inch thick, denser and less vascular than usual; the umbilical cord almost a thread, and seven inches in length. The ovum was entirely free from putrefaction. The woman informed us, that nine months since, she ceased to menstruate, and supposed herself pregnant. Her breasts swelled, and she began to increase in size. When at the usual period of quickening, she was attacked with violent flooding; which, however, soon ceased. A few days subsequent to this she experienced symptoms of quickening. Her breasts then became flaccid, and her size began to diminish. Nearly four weeks since, whilst using more than usual exertion, she was again attacked with flooding; which, however, was slight, and soon ceased. Since the period at which she supposed herself to quicken, her health has been unusually good.

The ovum, which we were enabled to obtain through the politeness of Dr. Ruan, her usual professional attendant, but who on this occasion happened to be out of the way, has been deposited in the Wistar Museum.

New form of Certificate of Death required by the Philadelphia Board of Health.—The Philadelphia Board of Health has adopted the following form according to which the certificates of death will be in future returned to the Health Office:

CERTIFICATE.

Philadelphia, 18
residing at No. Street, died
this day of aged years.
Colour | Occupation | Married or single | Native of | Has resided in Phila.
M. D.

The additional information which will thus be gained in relation to the colour, occupation, nativity, precise residence, &c., of the deceased, will furnish important data to the statistical investigator, and enable him to trace out the sources of mortality with much more exactness than he has been enabled to do from the meagre records hitherto made. The designation of the residences of the deceased will show the districts or localities where the influences prejudicial to life mostly abound, and such facts furnished by the statistical examiner may lead to a discovery of the sources of the deleterious agents, and ultimately to their removal. The improvement which the Philadelphia bill of mortality must derive from the judicious modification just adopted, will render it almost as perfect as similar records furnished by the large cities in Europe. G. E.

Borate of Soda in Dysmenorrhœa.—Dr. DANIEL STAHL, of Vincennes, Indiana, highly extols, in a communication to the *Western Journal of the Medical and Physical Sciences*, (April, 1837,) the efficacy of Borax in the treatment of Dysmenorrhœa. It is not, however, recommended to be given indiscriminately, or without preparing the system for its reception.

"In lymphatic constitutions and with patients who are debilitated by other diseases," says Dr. S., "the effect is often doubtful, at least not very prompt; whereas in patients of sanguineous or sanguineo-nervous constitutions, and where there is an actual plethora, it will always be found effectual if venesection be premised. We should never give it without bringing all the systems of the organism to a kind of equilibrium; therefore bleed and give antiphlogistics in plethoric constitutions, raise the energy of the nervous system in "nervous subjects," and give tonics to the debilitated.

"After many trials with borax, I determined on the following plan of treatment, and follow it now exclusively.

"In plethoric habits,* I take from four to six ounces of blood from the veins of one of the lower extremities, and repeat the v. s. if necessary, and keep the bowels open by epsom salts. For two days previous to the appearance of the menses, I order a warm foot bath every evening and morning, and give borax in the following formula:

"℞. Natri. borac, ʒii.; infusi semini lini. ʒvii. Misce.; every two hours a tablespoonful to be taken.

"The pain I relieve by extractum hyoscyami† one grain every fifteen or thirty minutes.

"In nervous habits where I find this complaint in four cases out of seven, I commence my treatment with the exhibition of tinctura valerianæ, teaspoonful doses thrice a day, and in days previous to the appearance of the menses, I give borax, etc.; as above.

"As soon as the menstruation ceases for the time, I treat plethoric habits with slight antiphlogistics, and with the nervous, I resume the use of tinctura valerianæ until a day or two previous to menstruation, when I act as before. After the second appearance of the menses, after following that plan, I will generally hear the patient relate with gratification, that the pain was less and of shorter duration, that she menstruated more than usual, and that she feels more contented and cheerful,‡ and by the third time, the complaint, the mere idea of which haunted the poor woman from one period to the other, is generally removed."

Case of Hydrocephalus treated by Tapping.—Professor L. A. DUGAS, communicated to the Medical Society of Augusta, at their meeting on the 9th of November, 1836, the following interesting case of chronic hydrocephalus, in which tapping was seven times resorted to, and sixty-three ounces of fluid drawn off. No unpleasant effects followed the operations, though a fatal issue was not prevented.

* It is very rare to find dysmenorrhœa in plethoric habits.

† In some cases the extr. hyoscyami produced nausea, and if there was no contraindication I gave Dover's powder, or what was the most effectual—Aqua Laurocerasi.

‡ In most cases of dysmenorrhœa menstruation is scanty, and symptoms of hysteria are present.

The subject of the case was a male child, born without accident, and who enjoyed apparent good health until one month old.

"His head was then perceived to increase in size more rapidly than is usual in health; and subsequently, the cranial bones separated, the eyes became spasmodically turned downward, and at four months of age the child experienced slight general spasms, which in a few days amounted to convulsions. He appeared in other respects perfectly well, was fleshy and had been subjected to no treatment whatever. The circumference of the head was now twenty-one inches, and the fluctuation could be distinctly felt at the forehead, which was puffed up by the contained fluid. In this condition Dr. D. found the patient, on the 25th of June, labouring under convulsions which had commenced several hours before. Dr. Antony happening to be present, it was at once determined in consultation, to draw off a portion of the effusion; but having no more suitable instrument at hand, Dr. D. made the puncture with a couching needle, penetrating about one inch deep, in the left angle of the fontanelle. On withdrawing the needle, an ounce and a half (℥iiss.) of limpid yellowish fluid oozed out, and no more could be obtained. The head was then bandaged; the convulsions continued during the operation, and two or three hours after.

"On the 5th of July, the operation was repeated with the same instrument, and the application of a cupping glass, when ℥ij. more were drawn off.

"Aug. 12. Head had very much enlarged, and on the use of a very small trocar, made expressly for the purpose, ℥viij. of fluid were removed.

"Aug. 29. Head larger than previous to the last operation. Drew off ℥xi

"Sept. 12. Head full, but not distended strongly. Drew off ℥xv.

"Sept. 30. Head again filled. Drew off ℥xliiss. Oct. 16. Drew off ℥xiv.

"Dr. D. remarked that the convulsions subsided shortly after the first operation, and did not return, except very slightly, a short time before the third and fifth puncture, although the accumulation continually increased. Indeed his general health appeared unimpaired until the 15th of October, when he became dull and stupid. The stupor gradually increased and he became insensible of the nipple when put into his mouth. On the 16th he appeared as if in a profound sleep, and had swallowed nothing for two days.

"After the removal of the ℥xiv. on that day, he again readily noticed and swallowed several teaspoonsful of milk poured into his mouth. He expired quietly on the 18th of October. The operations were never attended with the least change of pulse, nor symptoms of prostration—the only visible effect being the subsidence of the tumefaction, and of the tendency to spasm. Iodine, calomel, bandages, &c. were prescribed, but never attended to, from the unwillingness on the part of the mother to annoy the child, as she thought unnecessarily. The fluid was, after several of the operations, exposed to heat, without coagulating in the least.

Autopsy.—The cranium was opened longitudinally, by an incision made in the membranes connecting the two sides of the frontal and the two parietal bones. The brain was found expanded like a sack, lining the dura mater, and filled with fluid, which did not escape until the brain was punctured. The convolutions were entirely unfolded, and the walls of the *sac* thus formed were about a line or two thick. The corpora striata and thalami were not affected, and the third ventricle was nearly normal; the fornix, velum interpositum and plexus choroides existed; the septum lucidum was not found. The corpus callosum could not be recognised, although the cerebral substance forming the walls of the *sac* was as firm as usual at this age. Cerebellum normal—as also the medulla oblongata and encephalic nerves. The membranes presented nothing peculiar save a great want of blood in the vessels of the pia mater. The inner surface of the *cerebral sac* resembled very closely a healthy mucous coat of the stomach. It was in some places covered with thick flakes resembling dense mucus; some of these were yellowish, some brown, others of a cream colour and like thick pus. The yellowish patches were at the bottom of that portion of the *sac* corresponding to the anterior lobes of the brain, and were not very unlike the appearances left after the absorption of apoplectic effusion. The left hemisphere being the first opened, permitted the escape of the fluid contained in both, after which, on looking into the right cavity through the hole of communication with the left, a kind of longitudinal septum, though lacerated, was seen hanging from the upper part of the *sac* and reaching its floor. It resembled the cineritious substance, but was so pulpy as to be readily

torn and thus to prevent a satisfactory examination. It may possibly have been formed by flakes analogous to those already alluded to. On examining that part of the *sac* which corresponded to the external marks left by the punctures, the cicatrices of the seven perforations were distinctly seen in the cerebral substance, which at this place with its other membranes slightly adhered to the dura mater.

"The contained fluid measured sixty-four ounces, was limpid and of the colour of pale urine."—*Southern Med. & Surg. Journ.*, for Dec. 1836.

Case of Hydrocephalus treated by Tapping.—The *Southern Medical and Surgical Journal* for February last, contains an account of another case very similar to the preceding, and treated by Dr. J. B. Whitridge, president of the Medical Society of South Carolina, by the same operation.

The subject, was a negro child, whose birth was attended with less than ordinary suffering, and who one week after birth was affected with spasms, which continued for three weeks, when they finally subsided. At this period the head suddenly enlarged. The child became costive, and was generally fretful, but always urinated freely, nursed well, and in other respects enjoyed good health. When three months old, was brought to Dr. Whitridge. Dr. J. Glover* was consulted, who concurring in the propriety of an operation, it was performed by Dr. W. by puncturing the integuments of the cranium through the anterior fontanelle, about three-fourths of an inch to the right of the longitudinal sinus—a common director was then introduced, the groove of which served to conduct the serum from the brain, and in this way upwards of fourteen ounces, by weight, were drawn off.

"The child cried of course, from the pain of the operation, but seemed to be relieved by the evacuation, and before the close of the operation actually went to sleep. A piece of adhesive plaster was placed over the orifice, and the head bandaged so as to approximate the bones which were open at all their sutures, (except the lower portion of the squamous suture,) and to make some pressure upon the brain, perhaps nearly equal to what existed before. The strabismus which had previously been a prominent symptom, was now in some measure relieved. Immediately after the operation the child sucked heartily—but was somewhat fretful during the afternoon—towards evening there was a considerable increase of pulse. With a view to promote absorption from the brain and to determine to the skin and kidneys, I directed a mixture of two parts sp. æther. nitr. and one part tinc. dig. pur., three drops to be taken every two hours and gradually increased to six. This acted very pleasantly, not only upon the skin and kidneys, but as an anodyne, produced tranquil sleep during the latter part of the night.

"Sept. 1st. Apparently very comfortable all day—had three spontaneous evacuations from the bowels. Medicine continued in doses of six drops.

"Sept. 2nd. Child *in statu quo*, except that the head had discharged considerably during the night, and the bowels were somewhat constipated. Continued the drops until twelve o'clock, then ordered sub. mur. hydr. gr. vi. In the afternoon removed the bandage and found the head much diminished in size. Soon after, (allowing a little time for an equilibrium to be restored in the circulation,) firmly re-applied the bandage so as to make considerable compression. At six o'clock, directed ol. vol. pini lar. ℥ss., there having been but one alvine discharge during the day, and no other operation from the bowels since the exhibition of the calomel. The turpentine having no effect, ordered oleum ricini ℥ss. to be given in two doses, one half at nine o'clock, the other at half past ten if necessary.

"Sept. 5th. Child quite comfortable—nursed well—bowels acted on once or twice each day—apparently free from irritation and pain. Diuretic mixture continued in doses of six drops every two or three hours.

"Sept. 6th. In the morning the child had convulsions—the head gradually enlarging and strabismus increasing. Directed calomel gr. vi. to be given, which operated but three times during the afternoon and night."

The child had again convulsions on the 9th September; the general treatment was continued; but nothing particularly worthy of notice occurred until the 14th September. At this period the

"Child's head had attained precisely the same size it was before the operation,

* Dr. Joseph Glover was the first by whom this operation was performed.

ut the strabismus had almost entirely ceased, and the child seemed in other respects much better. At one o'clock repeated the operation near the place it was performed before, and drew off seventeen ounces of serous fluid, considerably more than a pint. Child bore it well. Cried heartily, and evinced very little inclination to syncope. Drops continued.

"Sept. 15th. The child had a convulsion in the morning, but has been in other respects quite comfortable during the day. Medicine continued."

The child's health continued as before, she had occasional convulsions and was treated as before. The head gradually enlarged, and by the 5th Oct. had become very turgid. On the next day it ceased to cry.

Oct. 7th. Vomiting came on and was frequent during the day.

Oct. 8th. Dr. W. "again operated upon the head, which was very turgid, and enlarged to nineteen and a quarter inches, measuring over the os occipitis and os frontis, and nineteen and three-fourth inches, measuring under the chin and over the posterior part of the ossa parietalia, near the apex of the lambdoidal suture. The quantity of serous fluid which was now evacuated amounted to fourteen ounces by weight. The puncture was made three-fourths of an inch further back than the former—some small blood-vessel was wounded, in consequence of which the serum was tinged with blood; perhaps a table-spoonful was discharged, the flow of which, however, ceased before the serum was all evacuated. The child which had been so senseless and so constantly inclined to sleep for three days before the operation, did not appear to suffer at all from it. It was evidently more sensible, animated, and brighter afterwards. Although there was not much strabismus previously, it looked better about the eyes after the operation was performed.

"Oct. 9th. The night though a tranquil one, was passed without much sleep. To-day the child seems brighter and better—sleeps very little—has had four voluntary stools, or else the effect of the calomel taken yesterday morning. The diuretic mixture resumed this afternoon, which had been suspended during the last thirty hours. No material alteration in the child during the 10th, 11th, and 12th, except that the head seemed to be filling up rapidly. On the thirteenth, the child had several convulsions—was fretful and sometimes cried severely—bowels somewhat constipated—had been acted on but once during the day. Directed the laced cap to be removed and the child's head bathed in cold water—the cap to be reapplied, but not so tight as before. Ordered, sub. mur. hydr. gr. vi., which operated but once next morning. Drops continued.

"Oct. 20th. No material alteration in the child, except a gradual enlargement of the head, not only from its rapidly filling up, but apparently from natural growth. The child nurses heartily, is fat, and grows well. The only inconvenience which it seems to suffer, is, occasional slight convulsions, and constipation of the bowels. The head had again become quite turgid, its circumference now being nineteen and a half inches and twenty and a quarter inches, measuring under the chin. At four o'clock Dr. W. repeated the operation, and drew off thirteen and a half ounces of serous fluid—reapplied the laced cap—directed the diuretic mixture to be continued as before, and sub mur. hydr. viij. grs. to be given every fourth day, to be followed with sup. tart. pot. if necessary.

"The child continued *in statu quo*, until Wednesday the 31st of October. Previous to that time, it was comfortable and nursed well. It however had fits occasionally. On Wednesday, as before stated, it became very much worse. Its head had now become quite enlarged, so as no doubt to occasion much compression of the brain. Fever ensued, the convulsions were increased, and in three or four days death ensued.

"*Post-mortem*.—The head was nineteen and three-fourth inches in circumference, measuring over the os frontis and os occipitis above the ears, and twenty and a half measuring over the ossa parietalia and under the chin; just a quarter of an inch larger each way than at the last operation.

"I first plunged in a small trocar and drew off what water would readily flow. I then made an incision through the scalp and through the meninges of the brain, in the direction of the longitudinal sinus, and along the sagittal suture, by means of which, I evacuated the balance of the serous fluid—in all two pounds and a quarter.

"The autopsy in this case, exhibits the following interesting and singular phenomena. The medullary substance of the brain was very small in quantity, being se-

parated into two parts at the ventricles, and attached to the parietes of the cranium—the substance of which was found principally upon two sides, and upon the base of the cranium, arising with a thin edge near the top of the parietal bones, and descending thence to the base, not more than six or eight lines in thickness in any part. The parietal bones were separated about two inches along the course of the sagittal suture, and with the os frontis and os occipitis, formed very large openings at the fontanelles. The dura mater and the other cerebral membranes (viz. the pia mater and tunica arachnoidea,) were very thick and strong, especially at the anterior fontanelle. The falciform process extended to the base of the brain, having a round opening in the centre, of about one inch in diameter, which of course admitted of a free communication of the serous fluid from one side to the other. The tentorium cerebelli had also an opening in it similar to that in the falciform process, which admitted of a free ingress and egress of serous fluid, so that all parts of the cavity of the cranium were subject to dropsical effusion. The cerebellum was somewhat smaller than usual, but in other respects it appeared quite natural and healthy. And upon the functions of this organ no doubt depended the exercise of the powers of life, for so long a time, and the apparent health and flesh of the child. The pressure upon this organ as well as the cerebrum, previous to each operation, no doubt was the principal cause of the convulsions. And had the operation been repeated on the Wednesday or Thursday preceding the child's death, it is probable its life would have been prolonged. But that a sound and healthy action would have been produced, or that a cure could have been effected by a repetition of the operation, is not at all probable. The oftener the operation was repeated, the more rapid would have been the accumulation—the more distressing the symptoms, and consequently the greater the necessity for relief."

United States Dispensatory.—The Reviewer of the new edition of the Pharmacopoeia of the Royal Medical College of London, in the London Medical Gazette for January last, speaks of the Dispensatory of the United States, by our countrymen, Drs. Wood and Bache, as "decidedly the best work of the kind yet published in any language." We are happy to give currency to this deserved compliment.

Medical College of Georgia.—At the Annual Commencement, held April 19th, 1837, the degree of M. D. was conferred on fourteen students.

Cincinnati Medical College.—The number of medical students in this Institution, during the past session, was 85; and at a commencement held on the 3d of March last, the degree of M. D. was conferred on 27. The number of students during the previous (first) session, was 66; and of graduates, 18.

Surgical Observations on Tumours, with Cases and Operations.—By J. C. WARREN, Professor of Anatomy and Surgery in Harvard University, and Surgeon to the Massachusetts General Hospital, with sixteen coloured plates. We have been favoured by the author with a copy of this splendid and valuable work, too late, however, to enable us to give it that attention which the high reputation of the author would claim for it. We hope to be able to present a review of it in our next.

College of Physicians and Surgeons, New York.—Dr. A. H. Stevens has resigned the surgical chair in this institution, and Dr. Alban G. Smith has been appointed by the regents to fill the vacancy. At the commencement, in April last, there were twenty graduates.

Transylvania Medical School.—The chairs in this school have been vacated by the trustees and refilled. Dr. Dudley has been reappointed Professor of Anatomy and Surgery, and Drs. Short and Richardson have also been reappointed to their former chairs; the former to the chair of Materia Medica and Botany, and the latter to that of Obstetrics and Diseases of Women and Children. Dr. J. C. Cross has been appointed to the chair of the Institutes of Medicine and Clinical Practice; Dr. J. Eberle to that of the Theory and Practice of Medicine, and Dr. T. D. Mitchell to that of Chemistry and Pharmacy. Dr. James M. Bush is adjunct Professor of Anatomy.

EXTRA-LIMITES.

REPORT ON THE RADICAL CURE OF HERNIA.

Extract from the Minutes of the Philadelphia Medical Society.

APRIL 29th, 1837.

Dr. R. COATES completed the reading of the Report of the Committee on the Radical Cure of Hernia, when, on motion,

Resolved, That the same be accepted and the Committee be discharged, and that the thanks of the Society be tendered to the Committee for the able and elaborate manner in which they have attended to the duties of their appointment.

Resolved, That a Committee of Two be appointed to request the publication of the Report of the Committee on the Radical Cure of Hernia in the American Journal of the Medical Sciences.

The Committee appointed by the Philadelphia Medical Society, at the session of the 27th of December, 1834, with directions to investigate the character of Stagner's Truss, and other proposed means of radical cure of Hernia, respectfully

REPORT:

That since the date of their Preliminary Report, (read Dec. 5th and 12th, 1835,) they have devoted much time and thought to the important investigation submitted to their charge; but the numerous mooted questions originally involved with it, have been gradually narrowed down in number and compass, in three different ways; firstly, by the decision of several physiological points; secondly, by the results of the analysis of the mechanical construction of instruments; and thirdly, by the introduction of improvements in the formation of trusses, calculated to remove the objections waged against some portion of the apparatus represented as imperfect in the preliminary report.

In offering to the society the conclusions deduced from the observations of the committee, it is deemed unnecessary to enter at length into *all the evidence upon which those conclusions have been founded*, for much of this matter is already before the public in a form sufficiently authentic, and accessible for every useful purpose; and the attempt to include the whole, would swell this report beyond all reasonable or necessary limits. Reference will, therefore, be freely made to the following documents, which have been produced and published in consequence of the investigations of the committee: 1st. The Preliminary Report, published in the American Journal of the Medical Sciences, Vol. XVII. p. 307. 2nd. Note of R. COATES, M. D., on two new Hernial Blocks. Ibid, 543. 3d. Letter from the same gentleman to HEBER CHASE, M. D., in reply to a note of the latter, on the *modus operandi* of instruments in Dr. CHASE's Treatise on the Radical Cure of Hernia by Instruments. Philadelphia, 1836.

Reference will be also made occasionally to the mechanical reasonings and the detailed cases contained in the work just mentioned.

In the eighth section of the Preliminary Report, (Op. cit. p. 324) the Committee ventured upon a physiological disquisition on the *modus operandi* of trusses, in producing *the apparently radical cure of Hernia*; and their conclusion on this subject was presented in the following sentence.

"These positions will explain the motive of the Committee in taking the ground, that the most perfectly retentive apparatus is that which offers the strongest probability of radical cure, and that any considerable irritation produced in the parts by the pressure of a block, may be considered, in the present state of the investigation, of secondary importance."—p. 326.

In the letter of the chairman to Dr. HEBER CHASE, to which reference has been already made, the question of the *modus operandi* has been argued at greater length than would have been proper in a report designed to present a rigid detail of facts and established deductions; but the tenor of that letter, written after much more extended observation than had been offered when the report was read, adds collateral support to the present opinions of the Committee, founded upon the whole of the evidence before them; namely, that the *radical cure of hernia*, by trusses, depends almost exclusively, if not entirely, upon the accuracy and permanency of the retention effected by the instrument. That considerable or long continued irritation in the parts, so far from being an advantage, in reality opposes the successful treatment; that there are no facts in their possession which tend to prove indisputably that even slight irritations of the superficial tissues are transmitted to the tendons of the abdominal muscles in such a manner as to accelerate the cure; and that radical cures are sometimes effected without any other irritations than such as are altogether fugitive in character.

It will be remembered by the Society that the Committee, in the Preliminary Report, expressed the decided opinion that "the retentive power of solid blocks exceeds, *cæteris paribus*, by considerable difference, that of pads composed of softer materials."

The whole current of the evidence since presented to them most fully substantiates the correctness of this position, as the number of cases has been large in which the various instruments with soft pads have failed in effecting accurate and permanent retention, and in which the more perfect apparatus with blocks of proper form have been substituted with complete success.

It has been deemed unnecessary to preserve voluminous records of the multitude of cases presented, at different times, before the individuals comprising the Committee, which proved the superior retentive powers of the trusses with solid blocks, but which could not be subjected to frequent examination, on account of the fastidiousness of patients, or the distance of their residences; but sufficient evidence on this head will be found among the detailed observations appended to the former and the present reports. Nor is it esteemed desirable to burden the Society with a laboured analysis of the mechanical defects in the form, material, and mode of attachment presented by the several descriptions of trusses in use prior to the introduction of the contrivance of Mr. Stagner; defects in nearly every instance removed by more recent improvements. This subject has been ably discussed in the fourth chapter of Dr. CHASE'S work. The problems involved in it are chiefly of a mechanical character, and all members of the profession

who are at all familiar with the exact sciences are therefore equally competent judges of the correctness of the demonstrations. There has been no evidence presented to lead the Committee into any change of opinion as to the impropriety of substituting firm but elastic materials for the absolute solids in the construction of the armature of trusses. The employment of caoutchouc (of which truss-pads are sometimes constructed) as a direct and permanent application to the skin, has been fully proved to be altogether inadmissible. The proofs of this fact were thrown before the society in a recent lecture, a notice of which will be found in the *American Journal of Medical Sciences*, XIX. 550; and the Committee will merely add that the irritating effects of this substance are so well known in the neighbourhood of the caoutchouc cloth manufactory, near this city, that it is extensively employed there as a popular remedy in cases of chronic rheumatism.

These remarks have been premised, in order to explain the motives of the Committee in confining their report exclusively to the consideration of the action of trusses with solid blocks in place of pads. Their observation has been extended over a much wider field, but they deem it inexpedient to occupy the time of the Society with an account of the defects of various apparatus which have been so fully analyzed by others that the merits and demerits may be now considered as fairly before the public.

The trusses with solid blocks, now in use or recommended by inventors, may be divided into two classes. 1st. Those which are constructed for the express purpose of producing irritation, in order to effect a condensation of the skin, cellular tissue, and the fascia superficialis or the abdominal tendons about the hernial orifice, into one common mass by adhesion. 2nd. Those which are designed to secure the constant, perfect and safe retention of the bowel, without the attempt to create intentional irritation in the parts pressed by the instrument.

The first class includes the truss of Stagner, and the various apparatus of Dr. Hood for the treatment of common inguinal, ventro-inguinal, femoral and umbilical hernia.

Your Committee are not assured whether the several conoidal truss-blocks of lead, tin, or other metals, of which that attached to the strap and buckler known as Price's Truss (*see CHASE on Hernia*, p. 59, figs. 9, 10, 11, 12,) may be taken as the type, and the truss which bears the name of Sample's patent, as the least objectionable, were intended or not, by their inventors, to produce adhesions between the skin and parts beneath; but as they undoubtedly act in a manner better calculated to produce irritation than either of the other forms, they are most naturally arranged in this class.

The second class contains the old and well known instrument introduced to the notice of the Society by Dr. PERRINE, during the debate which followed the presentation of the Preliminary Report in 1835.

This instrument, known under the name of Eberle's, or the Ratchet Truss, was alluded to in the report, when ivory truss-blocks were mentioned; but the specimen presented to the society by Dr. PERRINE was armed by a wooden block; and although the committee were not previously assured that wood had been employed in the construction of truss-blocks prior to its employment by Mr. Stagner, they have since ascertained that it has been in use for twenty years, and probably for a much longer period.

This class also embraces all the instruments invented by Dr. CHASE, which are five in number, and will be spoken of in detail hereafter.

The remarks of the Committee on the first of these classes, naturally arrange themselves under two heads. 1st. Comments upon the supposed establishment of adhesive inflammation; and 2ndly. An estimate of the retentive power of the apparatus.

First then, on the establishment of adhesive inflammation by trusses of the first class. Your Committee have watched, with great caution and most minutely, the changes produced by the pressure of the truss-blocks in a number of cases; and the result of their observations may be summed up as follows: The application of the instrument soon produces an erythematous blush of the integuments, which, when the pressure is severe, often continues for weeks or months; but, when mild from the first, or rendered so at a later period by the substitution of an instrument with a weaker spring, the redness of the skin changes its character, and appears, on the removal of the instrument, like that simple result of capillary distension which is witnessed immediately on the removal of a tight bandage, wherever it may have been applied; a distension obviously produced by diminished action of the arcuated fibres and coats of the vessels, the tonic contraction of which has been rendered unnecessary for a time by the substitution of a mechanical support, the capillaries being thus incapacitated for resisting completely the vis a tergo of the arterial circulation and the hydrodynamic pressure of the venous column. This cause being more permanent during the use of the truss than during that of almost any ordinary bandage, the consequences are also more durable; and this second kind of redness, or purpleness, is sometimes observable for many days after the removal of the instrument.

The first of these forms of redness is the obvious effect of the superficial irritation produced by the pressure of the block, and may be called, with some propriety, the primary redness; the second is seen even after the parts have become accustomed to the presence of the instrument, and we shall take the liberty of calling it the secondary redness.

The form of hyperemia observed in the primary redness is known to be favourable to adhesion, if the irritation be not sufficiently intense to produce decided inflammation; and even when inflammation does supervene, if the constitution of the patient be good, the inflamed part will be surrounded by cellular adhesions, or depositions usually so called, designed to limit its progress, according to a well known physiological law.

The primary redness, during the use of the trusses of the first class, is often carried to such an excess as to produce decided inflammation, and sometimes even excoriation of the skin. (Case X.) It becomes, then, a question of considerable importance to decide whether the irritation of the block, or that produced by the inflammation which it sometimes causes, ever be transmitted to deeper seated parts so as to bring about adhesion between the cutis-vera, the subcutaneous cellular tissue, and the fascia superficialis. The conclusion on this point will be stated presently.

The form of hyperemia as seen in the secondary redness, marks a condition of the vessels, which, instead of promoting adhesion, is well known to retard the formation of false membranes, while it promotes absorption to such a degree as frequently to determine the solution of such as are already formed, together with the interstitial deposits of tissues and sometimes even the tissues themselves.

If, then, these adhesions and condensations do occur, which are repre-

sented by the hypothesis as the cause of cure by these trusses, the evidence of their existence should be found during the continuance of the primary redness, and cannot be supposed to *commence* at a later period, when the parts have become familiarized to the pressure of the instrument.

Immediately after the application of a truss of the first class, the subcutaneous fat beneath the block begins to disappear by absorption, especially at the part corresponding with the shoulder or most prominent part of the block. After the disappearance of the adeps, the block still continues to sink deeper and deeper, until, in fleshy persons, it appears to be almost embedded; and, on removing the instrument, the integuments present a mould of the block, nearly or quite complete. This condition is observed before the subsidence of the primary redness in some cases, (Case XII.) and in others the parts may possibly become accustomed to the pressure before the depression of the integuments is so strongly marked; but in fact it has been observed in practice that active irritation of the skin is generally reproduced from time to time, being complicated with the secondary debility of the vessels already described; or, in other words, *the skin rarely becomes perfectly accustomed to the pressure of blocks of this class.*

The tenor of the specifications of the patents of Dr. Hood and Mr. Stagner, (the only authorities on the subject known to the Committee,) induces us to believe that the authors of the hypothesis did not intend to carry the supposed condensation of the skin, cellular tissue, and fascia superficialis beyond the point at which the above detailed appearances are observed; but that measures were then designed to be taken in order to lessen or control the amount of irritation produced by the instrument, either by the substitution of a less severe block, or by placing next the skin some layers of silk or other tissue to prevent the direct action of the wood. Your Committee are therefore of opinion that it would not be quite consistent with impartial justice to include the *ulterior effects of the continued pressure of the blocks* in the investigation of the truth or falsity of the hypothesis. These ulterior effects will be mentioned hereafter; but the condition of the parts about the hernial orifice, or the abdominal canal, at the spot where the block presses, at the time when it is most deeply embedded, and during or after the highest irritation, is as follows:

The cutis vera, presenting one or the other form of redness above described, is sometimes thickened a little around the edges of the block, where a general puffiness of the integuments is occasionally observed. In some instances this thickening of the true skin is perceptible for a short distance beneath the more inclined, or inner and upper edge of Hood's inguinal block; but with all the instruments of this class which have been seen in use, the parts where the pressure is considerable, or, in other words, those which are nearest the hernial orifice *when the instrument is rightly applied*, are marked by no thickening of the skin; and, in some instances, that membrane is rendered obviously thinner than when in its normal condition, *even when the case has not advanced beyond the primary stage of irritation.*

The subcutaneous cellular tissue is found in every instance reduced in thickness by the obvious removal of the adeps, and by some process producing still greater compression. The Committee have seen no evidence whatever of the slightest thickening, either in the fascia superficialis, the abdominal tendons, or the edges of the external abdominal ring when that

part has been acted on: and in all the cases the skin, where most closely approximated to the fascia, can be made to glide freely over it, when moved by the finger.

After the final removal of the truss, the parts thus flattened or impressed by the block rapidly regain the general level of the abdomen. The cellular tissue receives anew its characteristic deposits, both within and beneath the cutis vera, and the adeps reappears. A few weeks are sufficient to effect this change; it is sometimes completed before the entire subsidence of the secondary redness, and it has been known to commence even under the pressure of the blocks of Dr. CHASE's trusses.

Your Committee feel compelled to regard these facts as conclusive against the truth of the doctrine, that the trusses or blocks of the first class produce a real condensation of, or adhesion between the skin, the subcutaneous cellular tissue, and the fascia superficialis or abdominal tendons.

If the depression were the result of a true condensation, it would be utterly impossible that the skin should retain, as it invariably does, its mobility upon the parts beneath. If adhesions actually took place, and the hypothesis which considers the cellular tissue as a membrane containing cells be true, the obliteration of those cells would render impossible the rapid reproduction of fat and the disappearance of the depression which has been described. If, on the contrary, that hypothesis be correct which represents the cellular tissue as a homogeneous mass, then the existence of adhesions between the cutis and the parts beneath could not permit the skin to rise again to its natural level until the accidental membranous connexions were gradually elongated by mechanical or other forces; but the parts interested in the present case are not subject to any mechanical distending forces, in proof of which the Committee will refer to the letter of the chairman already quoted; nor can it be supposed that interstitial deposition alone could occasion the necessary stretching of the adhesions within the time required; for this process is always slow and tedious, even under the action of very powerful forces, as is seen in the adhesions following inflammations of serous cavities. If any should believe it possible that the renewed interstitial deposits might elevate the skin to the natural level, the Committee would merely suggest that these depositions could occur only in the intervals of the factitious membranes formed by the adhesions, and hence, that the skin thus elevated, would be inevitably rugose—a character totally inconsistent with the facts of the case. Moreover, we often witness similar depressions of the integuments among the effects of long continued pressure by bandages and splints in surgical cases—as, for instance, over the tibia in ulcers of the inferior extremities—yet, in no case do we see the skin adherent to the parts beneath, unless in places where there has been an actual loss of substance or the establishment of the suppurative process.

Your Committee, therefore, entertain decidedly the opinion that the hypothesis of condensation and adhesion is untenable.

It may now be asked, if adhesion and condensation are not produced by the first class of trusses, what are their actual effects? It is plain that the inflammation produced by the blocks, is greatest around the margin, where the blood-vessels are left free to perform their functions; and, that nature, in that situation, attempts to arrest the progress of the inflammation, or to circumscribe it in the usual way. But the condensation produced by this attempt appears to be confined, like the inflammation itself, entirely to the

skin, and if the consequent irritation be extended to the subcutaneous cellular tissue in any instance, its effects are there confined to a slight increase of the secretions, apparently œdematous, and certainly fluid and temporary. These changes are confined to parts distant from the hernial orifice, and cannot have any influence, direct or indirect, in opposing the exit of the bowel.

Beneath the block, where the pressure has a direct relation to the orifice, the changes are all the result of simple absorption.

If the form of the blocks were well adapted to the anatomical form of the parts, this absorption, if not carried beyond a certain extent, would render the retention of the bowel more secure, by bringing the instrument into closer relation with the actual seat of the accident. The question how far the blocks of trusses of the first class are calculated to secure retention, will be discussed presently; but it is proper, in the first place, to notice the ulterior effects of the instruments when the pressure is continued after the degree of absorption already described has been effected.

In this class of instruments the pressure acts chiefly on the parts immediately beneath the most prominent points and the sub-angular shoulders of the blocks. In these situations the wood is soon brought to bear with great force, and over a narrow or small space, upon the abdominal tendons and fascia.

Your Committee, in their Preliminary Report, expressed their fears that in certain cases, the continuance of this pressure might endanger the integrity of the tendons themselves. They do not feel warranted in quoting hearsay evidence on the justice of this fear, but the Society will observe that in one instance under their observation this result has actually taken place, (see Case XII.) The patient is still under treatment; a long space running perpendicularly upward from a much dilated external ring, following the direction of the shoulder of the inguinal block of Hood and Stagné, as it was applied in that case, is greatly weakened by absorption. The abdominal tendons are there obviously thin toward the part pressed by the heel of the block, and are very obscurely felt toward the middle of the space. The upper outline of the external ring cannot be felt, and its external side seems shaded off gradually, and becomes indistinct at its margin. The bowel is perfectly retained by one of Dr. CHASE's large ventro-inguinal trusses, but the ability of the tendons to recover their original stature can only be determined by time.

The doctrine of adhesion and condensation being overthrown, there can remain but one mode of explaining the action of the instruments and their alleged claims as means of radical cure in hernia, viz: Their mechanical influence in producing perfect retention of the bowel; for, whatever changes may occur in the hernial orifice while the instruments are applied, even granting that these changes ultimately render their further application unnecessary, can only be due to the exercise of the natural functions of the part affected, and have no farther dependence on the instruments than such as results from their mechanical action in permanently removing the substances which were previously present from time to time in the false passages which constitute the disease.

We will now, therefore, proceed to examine the retentive power of the trusses of the first class, so far as the subject remained unfinished in the Preliminary Report.

The trusses with conoidal blocks may be safely dismissed with a very few words. If their points be placed accurately over the hernial orifice, whether the intestine makes its exit by the internal or external ring, or at any other point on the surface of the abdomen, these blocks must act as distending forces; and, when the absorption consequent upon their pressure has reached its maximum, they substitute the constant presence of an unyielding solid body lined by the integuments for the occasional presence of a soft and pliable viscus in the false passage—a state of things in which the remedy is literally “worse than the disease!”

Eberle’s or the Ratchet Truss, with a wooden or ivory block, is an instrument which has never attracted very general attention from the profession. The peculiar mode by which the block is attached to the spring is liable to very grave objections; but as these have been very fully discussed in the work of Dr. CHASE, the Committee deem it unnecessary to dilate upon them here. The block itself is tolerably well calculated for some forms of ventro-inguinal or direct hernia, but falls, in this respect, far behind some of the more recent improvements. For common inguinal hernia its mechanical construction is badly calculated, as it is very difficult to cause its longitudinal diameter to agree at all with that of the abdominal canal; and the enlargement of its lower extremity occasions its pressure to be chiefly exerted on the external ring, where it is least required. It is highly probable that the internal ring was seldom protected at all, in the majority of the cases in which it was employed, and could never have been *very securely guarded* in any instance. Yet, notwithstanding these disadvantages, it is said to have affected some radical cures of hernia, as indeed most trusses do occasionally. Your Committee have never seen it in actual use, but though it is obviously less dangerous to the integrity of the tendons than either of the other trusses of the first class, they cannot recommend any further trials of its value, as more recent contrivances are obviously safer, and more certain in their action.

Neither this truss, nor those with conoidal blocks, are applicable to femoral hernia, nor could the former be employed in umbilical hernia.

In taking up the consideration of the apparatus of Stagner and Hood, it should be premised, first, that Mr. Stagner’s specification contains no claim to originality, except in regard to the form of the block, and perhaps the hook, which replaces the button commonly used for fastening the strap of the truss; the instrument being precisely similar in all other respects to the common old inguinal truss: and, secondly, that Dr. Hood’s specification contains no claim to *any truss with a spring*, so far as your Committee are capable of comprehending the language of the document, which is not entirely divested of apparent ambiguity. His claims cover certain block trusses invented by him, but he does not appear to claim the inguinal block, which the Committee, in their Preliminary Report, regarded as essentially the same with that of Stagner. He claims also a variety of compound and complex drawers, belts, &c. by means of which the blocks were to be applied without the aid of any main truss spring. But it was thought unnecessary at the time of the preliminary report, to go into the investigation of the action of these contrivances; and as they have been exhibited to the Society on a former occasion, the Committee will confine their remarks, at present, to the simple notification of their belief that these belts and drawers, viewed as means of retention in hernia, are vastly inferior to the simplest springs.

of the old trusses, whatever may be the form of the pads or blocks employed. This opinion is given on broad mechanical principles, for the Committee have not deemed it necessary to subject it to any practical test.

The adaptation of the blocks of Dr. Hood to the springs of common trusses, is mentioned incidentally in his specification. It is directed that when the circumstances of the case permit, this adaptation should be made; and, as the Committee believe that all cases which admit of the application of the blocks, admit also of the application of the spring, their analysis will be confined to the action of the blocks as connected with springs, similar to those of ordinary trusses.

The umbilical blocks of Hood do not appear to differ essentially from those previously and occasionally employed by surgical practitioners, unless it be in the mode of attachment by means of a spiral spring; and the Committee have nothing to add to the remarks on these instruments made in the Preliminary Report. (Op. cit. p. 312.) They have little additional remark to offer upon the femoral block of the same inventor, except to point out the fact, that as the prominent line of the block must necessarily cross the cord of Poupart's ligament before its elevated point can reach even the spot at which the bowel in this form of hernia, protrudes in front of the level of the fascia lata, it is impossible that the instrument can be brought into close relation with the hernial orifice beneath Gimbernat's ligament, except by the rupture or absorption of the ligament, or by a degree of compression intolerable to the patient; and that if the necessary relation could be established, the long plane presented by the block, so slightly inclined as it is to the root of the intestine, could not exert any perfect retentive power without the aid of intolerable compressive force. It is but just to state that the instrument under notice shares this objection in some degree with all its predecessors in the treatment of femoral hernia; for they all press upon Poupart's ligament. None of them address themselves directly to the femoral ring. The objection indeed weighs more heavily against the block of Dr. Hood than against the soft pads of the old trusses; for the latter, by yielding to the pressure of the ligament, and expanding below it, do offer *some* valuable portion of upward pressure by acting on the soft parts beneath it margin; whereas the solid block, being altogether unyielding, exerts scarce a particle of such influence. Your committee deem no further reasoning necessary to account for their disapproval of this instrument.

The inguinal block claimed by Stagner, and adopted, and perhaps somewhat modified, by Dr. Hood, has been made the subject of comment in the Preliminary Report—where its advantages, and the valid objections against it, have been stated. Many cases who had employed this instrument have presented themselves to the Committee, and in a few only of these has the retention of the bowel been constant. They can recall but one instance in which the evidence of the friends, or that of the patient, tended to show that the bowel had never descended during the employment of the truss, after it had been sufficiently adjusted. (Case III.)

That occasional radical cures have been effected by the use of trusses armed with these blocks, is probable, for such results have sometimes followed the use of almost every truss; but, waving the pain and inconvenience produced by the block, which are often very considerable, the Committee have seen sufficient evidence that it furnishes but insecure means of retention, in any form of hernia, and that in the common inguinal

form, for which it is expressly recommended, it cannot be made to press sufficiently on the internal ring, while the lower point of the shoulder acts upon the external ring. From the details of Case XII., to which reference has been already made, the Society will judge how far the linear pressure of the elevated ridge of the block, and the small dimensions of the most prominent part, may endanger the integrity of the tendons and effect the enlargement of the external ring. The objections to the form of this block, appear to outweigh any advantages resulting from its solidity.

The ventro-inguinal block of Hood, was condemned with less hesitation in the Preliminary Report—but it is now proper to add the reasons for this condemnation. The block was intended, according to the specification of the inventor, to draw together the parts about the ring of a ventro-inguinal hernia, and to produce adhesion between those parts and the edges of the ring all around the orifice. It is unnecessary to repeat the reasoning which appears to us to prove the fallacy of this theory of adhesion, but the impossibility effecting the adhesion is the lightest objection to the instrument. A stronger one is found in the fact that the concavity of the block necessarily permits the bowels to protrude for a certain distance, so as to occupy the hernial orifice and prevent its contraction, should nature attempt to close it by that process.

The only block of the first class now remaining unnoticed, is the ventro-inguinal block, with a parabolic projection, termed by Dr. Hood “the scrotal block,” which was approved, with justice, in Preliminary Report, (Op. cit. 323,) as it secured a more effective retention of certain cases of ventro-inguinal hernia than the armature of any truss then known; but the Committee considered “a more perfect instrument to fulfil the same purposes, both possible and desirable.” The defects perceptible in this truss-block, appear to have been, in great degree, the result of the peculiar opinions of the inventor as to the *modus operandi* of his apparatus—the principal error consisting in the undue elevation of the inferior margin of the block, which was evidently designed to produce the degree of irritation held necessary to effect a cure. Another highly important defect was the strong curvature of the lower margin, which appears as though it were modelled upon the supposition that the external orifice of the abdominal is, as its name implies, *a ring*—and not as nature made it, nearly *a triangle*, with the two columns of the external oblique forming its lateral boundaries and the upper edge of the os pubis its base. The transverse fibres which truncate the upper acute angle of this triangle, do indeed present an arch upward in the normal condition of the parts, and the os pubis is somewhat curved downward between the columns, so that the orifice bears some resemblance to a ring when felt by the finger after reverting the skin of the scrotum; but in ventro-inguinal hernia, these transverse fibres are generally broken or absorbed, and the pubic base being much elongated by the separation of the columns presents but a very slight degree of curvature. The block under review is not ill adapted to the form of this part of the pubis, and hence it does not effect retention with sufficient certainty and constancy to give entire satisfaction.

The observations of the Committee upon these defects have given rise to the contrivance of a most beautiful instrument, the merits of which will be noticed in the sequel.

The specification of Dr. Hood’s patent also contains some claims, a

certain mode of succession in the application of *different blocks in the same case, at different stages of the treatment*, and also, to the interposition of some layers of silk between the blocks and the integuments, and the removal of these layers from to time, *seriatim*;—as these measures relate only to the regulation of the degree of irritation produced by the apparatus, and as we have been compelled to oppose the doctrine which regards this irritation as desirable, we do not think it right to occupy the time of the society with any comments upon the subject of these claims.

From the result of all the evidence presented to them, and their reasonings upon it, the Committee are irresistibly drawn to the following conclusions. 1st. That the trusses of the first class do not secure the complete and permanent retention of the bowel with all the certainty which may be obtained by mechanical means. 2nd. That although it is extremely probable that radical cures may be occasionally effected by the use of such instruments, it has not been proved that the success following their employment exceeds that which has been obtained by the better kinds of trusses previously in use. 3d. That the action of these instruments is often attended with serious and unnecessary inconvenience, uneasiness and pain. Lastly, That their employment for too long a time, when the degree of pressure exerted by them is considerable, sometimes produces absorption of the tendons, dilatation of the hernial orifice, and an extension of the evils they are designed to remove; and that any attempt to obviate this danger, by lessening the pressure while the support of the instruments continues to be required, will diminish the security of the retention. For all which reasons the Committee do not feel warranted in making a favourable report on the claims of this class of trusses upon the confidence of the society.

In entering upon the analysis of the merits of the second class of trusses, the labour becomes more complex in character, and requires that the subject should be divided under more numerous captions.

As the course of the previous argument required that Eberle's or the Ratchet Truss should be noticed in the former part of this Report, rather than in its natural order among its fellows of the second class, there remain for examination only the six instruments of Dr. CHASE.

The object of these instruments is to secure the perfect and permanent retention of the viscera in hernia, in order to permit the powers of nature to effect a radical cure after the removal of the misplaced parts which are supposed to offer the greatest obstacle to her success. It is proper, therefore, to investigate in the first instance how far they fulfil the all important purpose of retention; leaving their effects upon the tissues, the *modus operandi* of nature, in effecting the cure, and the extent of the results to be discussed in the sequel under distinct heads.

The inventions and improvements of Dr. CHASE, many of which have been adopted since the presentation of the Preliminary Report, extend to all parts of the truss and its appendages, and his attention to minute but highly important details has been carried to an extent never equalled by any of his predecessors in this branch of surgery. The complete instruments employed by him are—1st. The Inguinal or Common Inguinal Truss. 2nd. The Vento-Inguinal Truss. 3d. The Femoral Truss. 4th. The Umbilical Truss. 5th. The Umbilical Belt. 6th. The Double Truss. Each of these demands separate notice, and in most of them the following parts re-

quire distinct examination. (a) The Block; (b) the Block-attachment; (c) the Spring and Strap-attachment; (d) the Appendages.

I.—OF INGUINAL OR COMMON INGUINAL TRUSS.

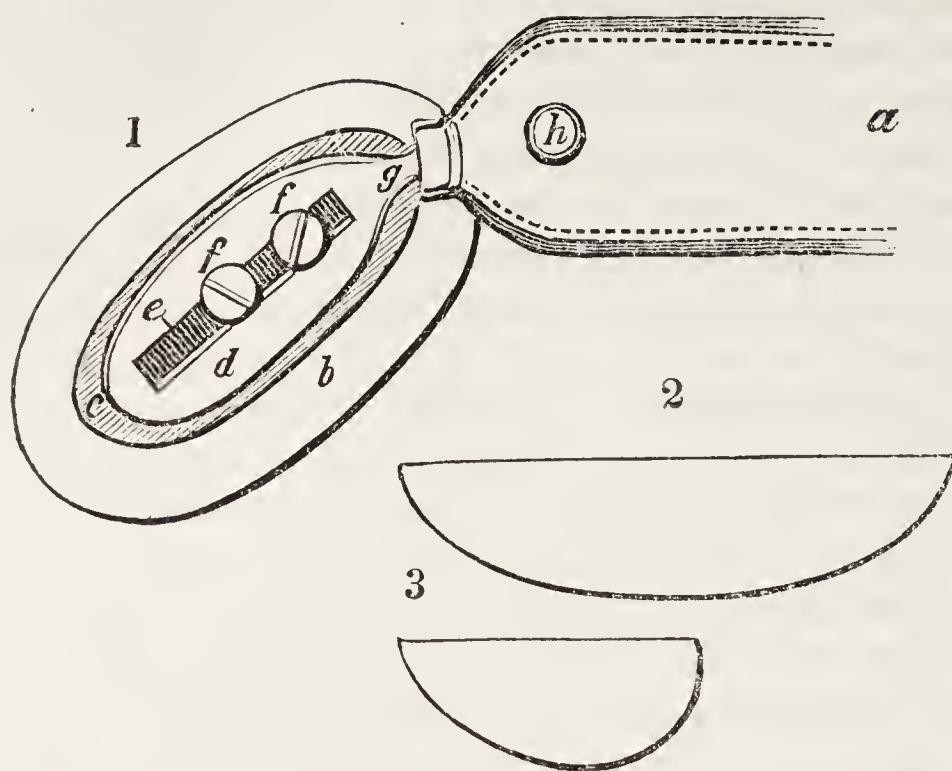


FIG. 1.—a The extremity of the main-spring of the truss.—b The block.—c The brass block-rider: the screws by which it is attached being covered by the block-slide.—d The block-slide.—e The window in the block-slide.—ff The two broad-headed screws of the block-adjustment, securing the rider to the slide, and, when loosened, sliding freely in the window.—g The soft iron flexible neck, attaching the block-slide to the main-spring.—h The button for the pelvic strap, which is generally used for the perineal strap also.

The proper perineal strap-button on the end of the block-slide is omitted in this and some succeeding figures, to prevent confusion.

FIG. 2.—Longitudinal section of the block.

FIG. 3.—Transverse section of the same.

(a) *Of the Block.*—The block of this truss was warmly approved in the Preliminary Report, (Op. cit. p. 323.) and it has amply maintained its character throughout the more recent investigations: it is so perfectly adapted to the form of the parts interested in common inguinal hernia that the Committee are unable to perceive in what manner it could be improved; nor has it ever failed, under their observation, in retaining the bowel both permanently and completely during the time of its employment, after the first few days required for the accurate adjustment of the instrument. Nothing farther appears necessary to prove the decided superiority of this block over all others known to the profession, in the particular form of hernia for which it is designed.

(b) *Of the Block-attachment.*—Two very important improvements upon the old modes of attaching the pad to the spring of the truss are observable in the block-attachment of the Inguinal Truss. The block is surmounted by a thin oval plate of brass, termed by the inventor a *block-rider*; and this is adapted to the under surface of an iron plate of nearly similar form, called the block-slide, to which it is attached by means of two round-headed screws, playing freely, when loosened a little, in a longitudinal fenestrum in the block-slide, so as to admit of any required change of the position of the block in this direction, to the extent of about an inch in the trusses designed for adults. The block-slide is connected to the spring by means of a round neck of soft iron, about three quarters of an inch in length, sufficiently stiff to resist any change of shape during the most active movements of

the patient, and sufficiently pliable to act like a universal joint under the hands of the surgeon. The combined action of the slide and the neck enables us to adjust the block with the utmost precision to the edge of Poupart's ligament, the rout of the abdominal canal, and the internal ring, whatever may be the peculiar form of the abdomen of the patient, while the block remains invariably in the exact position chosen by the surgeon; advantages possessed by none of the trusses previously in use, so far as they are known to the Committee. These improvements are, in themselves, sufficient to add very greatly to the value of the instrument.

(c) *Of the Spring and Strap-attachment.*—The endless varieties of form which have been given to the springs of trusses, render it apparently impossible that any thing intrinsically novel, in this part of the hernial apparatus, should be presented to the public hereafter; but it is of the utmost importance that the profession should determine what class of springs are calculated to give the greatest degree of security and permanency to the action of trusses.

This subject has been amply discussed in the work of Dr. CHASE already repeatedly cited; and the Committee are prepared, after due reflection, to coincide in the opinion expressed by that gentleman, that the semi-circular steel springs of Salmon and Ody are objectionable, because they are brought into accurate relation with the body only at the spots corresponding with the spine and the hernial orifice; the whole arch of the spring resting loosely over the side of the pelvis without a fixed location, and remaining liable to continual change of place from the movements of the glutei muscles and the reaction of the dress of the patient. The changes just mentioned must inevitably lead to the danger of corresponding changes in the position of the pads or blocks, and consequent insecurity of retention. The motives for the invention of this class of springs were the three following, and they are obviously fallacious. 1st. It was supposed that the pressure of the spiral elastic springs, being exerted throughout their whole length, renders them liable to derangement by the motions of the parts on which they press; but, excepting on the front of the hypogastric region of the abdomen, those parts have so slight a degree of mobility—based as they are upon the solid structure of the pelvis, and almost uninfluenced by muscular contractions—that their alterations of figure are of no real importance. The changes in the figure of the hypogastric region are fully compensated by the elasticity of the spiral springs, and those of the parts over the ring of the ilium are successfully counteracted by perineal straps, so that the accuracy and permanence of retention are not contravened when spiral springs are employed. 2nd. It was supposed that the changes of shape in the hypogastric region required some mode of adjustment more complete than that effected by the elasticity of the main spring, to enable the pad or block to accommodate itself at all times to the form of the parts; and hence the ball-and-socket pad attachment, to which the semi-circular spring was deemed peculiarly adapted. But, if desirable, this mode of attachment may be as readily employed in connexion with the spiral spring. Your Committee do not deem it desirable; because the ball-and-socket attachment renders secure but one point on the back of the pad or block, while the circumference may be tilted in any direction by the pressure of an intestine from within, almost as readily as by the movements of the abdomen, to which the pad is designed to yield; for the soft and compressible surface of the hypogastric region can-

not securely prevent this tilting when the adjustment of the pad is not remarkably accurate, or when the propulsive force of the intestine in hernia is considerable. A third argument urged in favour of the introduction of semi-circular springs was drawn from the tendency of the strap attached to the spiral spring trusses to draw upwards, and thus displace the pad; but this difficulty is completely removable by giving to the spiral spring and the accessory parts of the truss a proper form and disposition, as will be explained hereafter.

Your Committee are therefore of opinion that Dr. CHASE has done wisely in adopting the spiral spring, and retaining the strap so as to encircle the whole pelvis by the truss, in preference to the semi-circular spring and universal joint of Salmon and Ody's instrument, and the modifications of the same by the late Dr. HULL, of New York, the Rev. Mr. REID, of Georgia, &c. &c.

Although there is nothing positively novel in this part of the Inguinal Truss of CHASE, the inventor has established definite rules for the degree of temper and the extent of the various curvatures of the spring, and also for the position of the strap button, which render it easy to adjust the instrument more securely and permanently in all cases than can be done when these points are left to the discretion of instrument makers. Experience has decided that there is an advantage in giving an elastic temper to all that portion of the spring which intervenes between the pad-attachment in front and the opposite sacro-iliac symphysis in rear, but that the portion extending from the latter point to the opposite side of the pelvis should be so far softened as to admit of adjustment by being permanently bent. Three inches of the hinder extremity are left ductile in all the trusses of the full size; and thus the necessity of making an instrument expressly for each individual case (the great difficulty in the employment of spiral springs entirely of tempered steel) is completely obviated, without sacrificing the accuracy of the adjustment on the one hand, or its permanency on the other.

It has been customary to curve downward the anterior end of the spiral spring, so that when the part which lies across the back is horizontal, the front extremity may approach more nearly toward the abdominal canal. In CHASE's Inguinal Truss this curvature does not exceed three-fourths of an inch, and its commencement is found far back upon the costa ilii when the instrument is applied; so that the spring, in passing forward from that point, winds downward below the anterior superior spinous process without encroaching too much upon the bellies of the glutii muscles or disturbing the proper position of the spring and strap on the back part of the pelvis. Any further increase of this curvature is attended with inconvenience, by giving the direction of the strap too much obliquity, and disposing the instrument to tilt upward in front; and such increase is rendered altogether unnecessary by the soft iron neck of the pad-attachment. In the last three inches of the anterior end of the spring there is another curvature, resulting from a slight torsion of the axis of the generating curve of the spring, which brings the flat side of this part of the spring into more complete correspondence with the surface of the hypogastric region—a matter of much importance to the comfort of the patient, and one giving additional security to the position of the instrument.

It has been customary, almost invariably, with truss makers, to place the

strap-button upon the plate or expansion which supports the pad, but Dr. CHASE has very wisely affixed it to the anterior end of the spring; by which means the obliquity of the strap is much diminished, and the pelvis is enclosed by the instrument in a direction approaching very nearly to the circle, the strap lying altogether above the level of the block-slide, and the disposition of the instrument to tilt or ride upwards being reduced almost to nothing.

The Committee consider the establishment of a fixed model for the triple curvature of the spiral spring, and the position of the strap button, as a highly important recommendation to the instrument under notice.

(d) *Of the Appendages.*—The perineal strap is never wanting in the Inguinal Truss of Dr. CHASE. It is attached behind by means of a sliding loop, through which pass the spring and cover. Before, it is commonly secured to the strap button, but each instrument is also provided with another button made expressly for the perineal strap. This is seated on the lower extremity of the block-slide, and may be used to give additional security and force to the action of the block when the lower part of the abdomen is very prominent and loaded with fat. The back-pad is a very important appendage to the truss, giving great certainty to the position of the instrument, by protecting from irritation the spinous processes of the sacrum, and filling the interval between the spring and the integuments along the median line on the back of the pelvis. Some very important improvements have been made in the construction and mode of attachment of this pad. It is formed of a simple circular disk of tin, about four inches in diameter, covered with soft buckskin, and lightly wadded. A broad sliding loop of leather suspends it on the spring and cover, so that its position may be adapted exactly to the size of the patient and other accidental circumstances. This perfectly free mobility of the back-pad is believed to be a novel arrangement and one of high practical importance; for it is found that the parts about the back of the pelvis are so intolerant of even slight pressure, when very long continued, that the subcutaneous fat becomes absorbed and the skin irritated by the mildest back-pad, if it be worn in one invariable position for many months consecutively. This difficulty is entirely obviated by an occasional change of position produced by sliding the pad a little toward one or the other side;—a change that is not attended with any loss in the security of retention, and which is accomplished more readily by the arrangement just described than by any other known to the Committee.

Having thus analysed the several parts of the Inguinal Truss of Dr. CHASE, the Committee feel bound honestly to state their conviction that this instrument surpasses all others known to them in the accuracy and permanence of its retentive power in common Inguinal Hernia; a conviction fully sustained by all their practical observations of the action of trusses. The instrument is worn with so much comfort, that patients generally relinquish it unwillingly, and sometimes *absolutely refuse so to do* even when pronounced well by the surgeon.

The Committee find themselves unable to suggest any improvement or to point out any defect of principle or construction in this truss as now employed by the inventor.

II.—OF THE VENTRO-INGUINAL TRUSS.

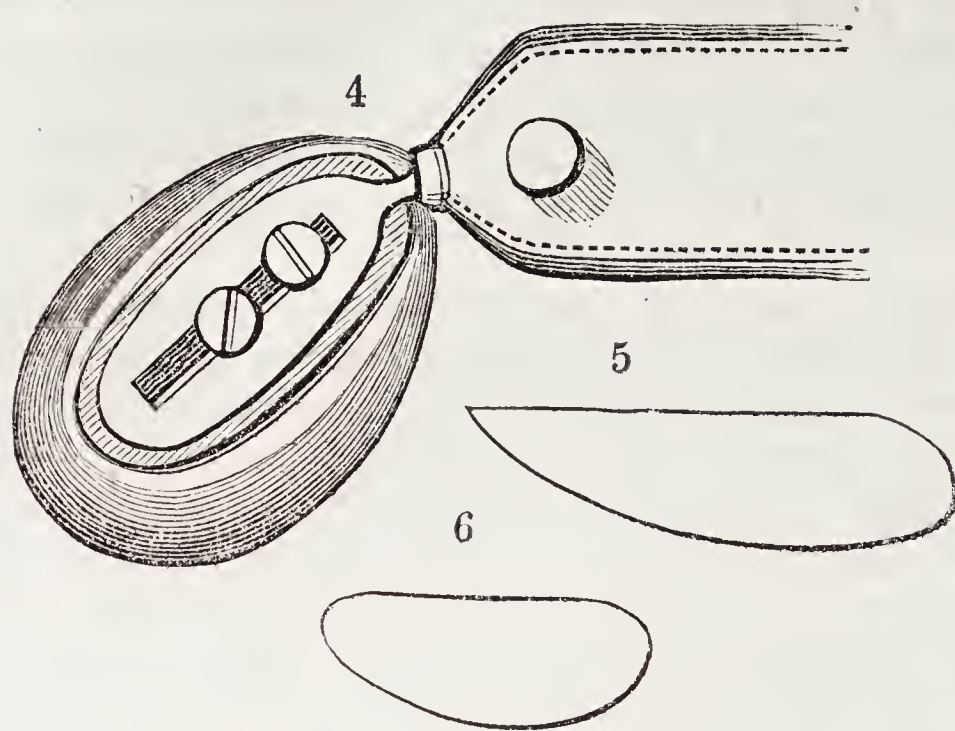


FIG. 4. The attachment being in all respects similar to that in fig. 1, no references are required.

FIG. 5. Longitudinal section of the block.—FIG. 6. Transverse section.

It will be recollected that at the time of the Preliminary Report, Dr. CHASE employed in ventro-inguinal hernia, either his own common inguinal block, or a modification of Hood's block with a parabolic projection. The former did not furnish sufficient security against protrusion, and we have already mentioned that the latter, though approved by the Committee as the best solid block then in use for inguinal hernia, is liable to some decided objections, not altogether unattended with danger. The Committee, therefore, stated that they considered "a more perfect instrument to fulfil the same purposes, both possible and desirable." (Prel. Rep. 323.) Their views on this subject having been freely communicated to Dr. CHASE, who was already conscious of the necessity of improvement in this instrument, he devoted his mechanical talent to the removal of the difficulty. The result was the construction of the ventro-inguinal block, described by the chairman under the head of American Intelligence, in the same number of the American Journal which contains the report, (p. 543.) At the time that the note was written, the Committee had not enjoyed an opportunity of testing the practical application of this block. They have since witnessed its operation in many cases, some of which were of a very unfavourable character. It is extremely difficult perfectly to retain a ventro-inguinal or direct hernia by any of the forms of soft pads, as it is indispensably necessary that those pads should press extensively upon the brim of the pelvis, in order that they may completely guard an orifice bounded on one side by the pubic bone. This pressure not only increases the number and severity of the cases of varicocele, a disease of frequent occurrence, under the use of all trusses, though seldom of much moment, but it also gives rise occasionally to troublesome hydrocele, and sometimes to wasting of the testicle. The form of CHASE's ventro-inguinal block is so accurately adapted to that of the os pubis, that it has secured the bowel perfectly in every instance of ventro-inguinal hernia in which it has been seen applied by the Committee. The primary adjustment of the truss is considerably more difficult, and requires more time and skill in the worst cases

of this accident than in the inguinal variety, but the ultimate success of retention does not appear to be less perfect when once accomplished. The pressure of this block upon the os pubis has been made a subject of complaint in only one instance, and the inconvenience then resulted from a slight mal-adjustment in the first application, which being corrected, the difficulty never recurred.

As regards the accidents consequent to the use of this instrument, the coexistence of varicocele has been observed in several instances, but the Committee think, not more frequently than after the use of the old common Inguinal Trusses. This affection, to the extent noticed, is so common in persons labouring under hernia, and even among those who are not affected with any other disease, that they feel considerable doubt whether in the cases observed, it was generally referable to the action of the truss, to the pressure of the intestines when protruded, or to some pre-existing cause. They have not been able, in more than one instance, to determine, positively, that it was caused by the instrument, and in no case has it produced material inconvenience. One case of slight and temporary hydrocele has been observed by the chairman, and in this the hydrocele attracted but little attention until after the patient had been ordered to relinquish the truss. It occasioned him some alarm at first, for he supposed that a relapse of hernia had taken place; but the symptoms disappeared in a few weeks. (Case V.)

An Agent for Dr. CHASE mentions another similar case, but it appears, from the slender amount of evidence heretofore obtained, that this form of hydrocele is of short duration, and of no material importance. In the very old and extensive ventro-ingual hernia described in Case I., there was an alteration of texture observable on the side corresponding with the hernia, both in the spermatic cord and the testicle, the latter being almost destroyed by absorption. The Chairman of the Committee, by whom these parts were most cautiously examined, is decidedly of the opinion that this change could not have been induced by the pressure of the wooden truss-blocks employed, defective as some of them were, because it is unreasonable to suppose that such results could have followed an embarrassment in the circulation of the cord, in the short space of time during which the hard blocks were in use, without occasioning pain or inconvenience to the patient. It is fair to conclude, then, that as the condition of the testicle had never been perceived by the patient until pointed out by the Committee, the absorption was the result of the long continued action of the ill supported intestines, together with the occasional pressure of ill applied trusses upon the pubic bone.

The Committee are, therefore, of opinion that there exist no physiological objections to the use of the Ventro-Inguinal Block of Dr. CHASE, which are not equally applicable to all known means of retention in ventro-ingual hernia: that this block is more accurately adapted to the form of the pelvis, and the parts on which it is intended to act, than any pad or block previously in use, and that it escapes the objections felt to the Ventro-Inguinal Block of Dr. Hood, by the greater regularity of its arched form, and the absence of any angularity or other peculiarity of shape designed for the production of irritation.

The only peculiarity of the Ventro-Inguinal Truss of Dr. CHASE, consists in the form of the block. In every other particular, it is identical with the

Inguinal Truss. But, in the application of the instrument, it is necessary that the perineal strap should be secured, at its anterior extremity, to the button on the end of the block-slide, and not to that on the anterior extremity of the spring.

To the complete instrument, as it has been actually employed during the last year, the Committee may safely apply the same language used in concluding their remarks on the Inguinal Truss.

III.—OF THE FEMORAL TRUSS.

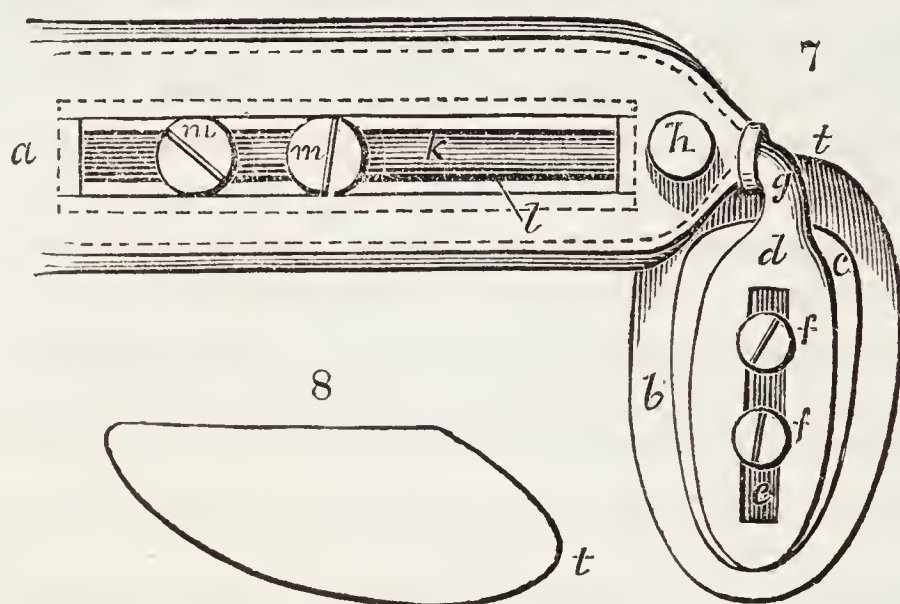


FIG. 7.—The letters from *a* to *h*, inclusive, have the same reference as in fig. 1.—*k* A window in the anterior extremity of the main-spring.—*l* The iron neck of the block-side, continued along the main-spring for some inches and seen through the window *k*.—*m m* Two broad-headed screws of the spring adjustment, securing the flattened extremity of the iron neck to the main-spring, and, when loose, permitting it to slide on the main-spring.

FIG. 8.—A longitudinal section of the femoral block.

The comparative rarity of femoral hernia, and the fact that a large proportion of the cases of this class occur in females, have prevented the committee from receiving testimony upon a sufficient number to form a safe basis for calculation in estimating the value of instruments by practical tests alone; and they feel under the necessity of treating this branch of their subject chiefly as a mechanical question.

Even the anatomy of femoral hernia has not been very well understood until recent times, and this furnishes the only reasonable excuse for the fact that, no truss expressly designed for the treatment of this variety of hernia has ever been strongly pressed upon the attention of the profession. Many trusses have been indeed advertised as applicable to all the forms of hernia;—a degree of pretension carrying with it the proofs of its own fallacy;—and certain works on surgery contain directions for slight modifications in the form of the pads, the curvature of the springs, and the mode of application of Inguinal Trusses, to adapt these instruments to cases of femoral hernia; but your Committee cannot recall any apparatus entitled to the name of a Femoral Truss, (the invention of Dr. Hood being not a truss, but simply a block intended to be added to the spring of one of the common trusses under certain circumstances) prior to the construction of the instrument of Dr. CHASE, which is now under examination.

It is proper to recall the attention of the Society to a peculiarity already pointed out as common to all the trusses previously in use, and to the femo-

ral block of Dr. Hood. The pad or block invariably covered not only the site of hernial tumour, but also a portion, and generally a considerable portion, of Poupart's ligament. That the pads or blocks which act in the manner above described cannot effect any great certainty of retention unless the ligaments be made to yield, and the neck of the hernial sac become pressed against the pubic bone with considerable firmness. In the opinion of your Committee, the degree of pressure required to accomplish this purpose would exceed the power of any truss-spring, and the capacity of endurance possessed by the patient, or that of the parts acted upon by the instrument.

All the instruments employed prior to the invention of Mr. Stagner are liable to another objection. They press upon so large a surface, that when employed in femoral hernia they are necessarily liable to displacement in the extensive motions of the thigh.

When the Committee view these remarks, in connexion with the fact that they have met with no detailed and satisfactory records of the radical cure of femoral hernia, by instruments, prior to the year 1835, they are strongly induced to conclude that, no truss employed before the invention of that of Dr. CHASE was capable of securing and maintaining that perfect retention of the last portion of the bowel beneath Poupart's ligament, which, by the hypothesis adopted in this Report, is indispensably necessary to the radical cure of this form of hernia.

It will be naturally asked, why, if the retention has always been imperfect or inconstant, have so many patients, labouring under femoral hernia, been secured for years against strangulation?

The reply does not appear difficult. The older trusses, with soft pads, when arranged with great care, were quite capable of closing all that part of the hernial sac which lay below Poupart's ligament; and if, during exertion, or unusual flexion of the thigh, a small portion of intestine was accidentally protruded into the sac, the pressure of the pad must have acted as the best of all modes of taxis, the moment that the exertion ceased or the position of the limb was changed. This action would tend to confine the protrusion almost constantly to the femoral canal, which, being very short and narrow, cannot accommodate a sufficient amount of intestine to produce much danger of strangulation, or to arrest the passage of alvine matter; yet the frequent presence of even minute portions of intestine in the canal, would effectually prevent the contraction of the orifice and destroy the hope of radical cure. The belief that trusses with soft pads do not actually retain femoral hernia, receives additional support from the symptoms of abdominal uneasiness, indigestion, chronic pains, &c. which are usually made a subject of complaint with those who are treated by such instruments both in this kind of hernia and in the inguinal varieties; symptoms which speedily disappear in the latter, when the retention is made accurate and constant by the instruments already described.

It appears, then, that Dr. CHASE in attempting the construction of a novel truss peculiarly adapted to the treatment of femoral hernia, ventured upon untrodden ground. We will examine the result.

(a) *Of the Femoral Block.*—At the time of the Preliminary Report, Dr. CHASE was in the habit of employing, for femoral hernia, a block in all respects similar, except in size, to that designed for common inguinal hernia. This was applied in such a manner as to act entirely below Poupart's ligament; and, when sunk by the absorption of the subcutaneous fat, &c. its

upper extremity tended to oppose directly, and therefore powerfully, the descent of the intestine beyond the margin of the ligament; but it was abandoned soon after the presentation of the report, when the doctrine of cure by irritation was shaken by the course of the investigations; and it was suggested that possibly a block could be invented, which, by becoming embedded in the integuments, might act by means of a suitable prominence beneath the edge of Poupert's ligament, and by pressing the soft parts directly upward, might arrest the bowel at the edge of Gimbernat's ligament, so as to render the retention as accurate as that obtained in inguinal hernia. This suggestion led to the invention of the femoral block mentioned in the note of the Chairman, already quoted. It is very difficult to describe the form of this block, and the Committee will refer to the treatise of the inventor for the best description and an excellent wood-cut representation of it. By considering the mechanical principles of its action, together with the only case fairly before the Committee in which it has been employed, (Case X.) it is deemed safe to recommend it as preferable to any pad or block previously employed in this variety of hernia. It is calculated to preserve its position more accurately than the one before in use; it is not liable to become disturbed by the motions of the thigh; and it gives support in a direction which enables it to act at the greatest mechanical advantage. How far it may answer the special purpose of its construction, by entering under the fold of Poupert's ligament and acting almost directly on the femoral ring, the Committee will not venture to judge upon the evidence of a single case. The report of Dr. CHASE as to its result in other instances, is favourable, but neither that gentleman nor the Committee regard it as having acquired the highest degree of perfection of which it is capable. It will, probably, undergo further modification.

(b) *Of the Block-attachment.*—The extreme accuracy desirable in the adjustment of the small femoral block, renders the mode of attachment a matter of great importance. Dr. CHASE has succeeded in reaching, in this respect, a degree of perfection much higher than that attained by any of his predecessors. The relation of the femoral ring to the parietes of the pelvis varies in different individuals to a much greater extent than that of the abdominal canal, and its variations are not so nearly confined to one right line. The soft iron neck of the block-attachment in this truss is bent at a right angle, so as to place the long diameter of the block in a position perpendicular when the patient stands erect. In this position the motions of the block-slide, which are similar to those observed in the preceding trusses, adapt the block to the height of Poupert's ligament with great nicety; but to meet the peculiarities of individuals in regard to the distance between the ring of the ilium and the femoral ring, another arrangement is necessary. There is a fenestrum, two inches in length, in the anterior extremity of the spring; and the soft iron neck, instead of being permanently secured to the spring, is elongated two or three inches, curved, flattened, and attached to the spring by means of two screws, which pass through the fenestrum, and, when loosened, play freely therein, so as to allow the block to approach or recede from the mesial line to any required degree. This double adjustment is simple, secure, and perfectly accurate.

There is no other peculiarity in the spring or appendages of this truss, but the perineal strap is always secured in front to the button on the bottom of the block-slide.

IV.—OF THE DOUBLE TRUSS.



FIG. 9.—*a* Two common inguinal blocks with their attachments.—*b* The spring cover of the left truss terminating in the strap *c c c c*.—*c c c c* The pelvic strap of the left truss, thrown into loops, and passing through an opening beneath the base of the attachment of the strap on the right side at *e*, like the flexor tendons of the last phalanx of the fingers through the terminations of those of the second phalanx.—*d* The spring cover of the right truss terminating in the strap *f f f f*.—*e* The site of the commencement of the pelvic strap of the right truss, secured by the edges to the spring cover, but permitting the left pelvic strap to pass up from under its base so as to become superficial in the rest of its course; this arrangement being concealed by the instrument.—*f f f f* The pelvic strap of the right truss thrown into loops.—*g g g g g* Loops confining each pelvic strap respectively to the spring cover of the opposite truss.—*h* The two springs seen one behind the other, and naked, between the ends of the spring covers.—*k k* Dotted lines representing the spots where the spring of each truss terminates within the spring cover of its fellow.—*l* A dotted line representing the proper position for the back pad.

Great difficulty has always been experienced in treating double hernia when the bowel protrudes on both sides of the lower boundary of the abdomen. The double trusses which have been from time to time constructed, have been formed by encircling the back and sides of the pelvis with a single spring armed with a truss-pad at each extremity; or the two halves of the spring, divided at the spine, were connected by means of a slide or hinge. Notwithstanding the many modes of adjusting the pads in the attempt to effect their accurate adaptation, it was found, practically, that the rigidity of these instruments rendered it impossible to secure the springs properly upon the pelvis or the pads upon the hernial orifice, and none of them have ever obtained the sanction of the profession. The imperfect action of the double trusses, drove the surgeon to the necessity of employing two single trusses in the treatment of double hernia; but here, again, the treatment is surrounded by difficulty; for the interference between the springs behind, and the twisting of the two straps round each other in front, render retention uncertain, and produce great annoyance and disgust to the patient, from the clumsiness of the machinery.

Since the Preliminary Report was read, Dr. CHASE has invented the admirable instrument now for the first time presented to the Society. It is an association of two single trusses, so combined as to be perfectly independent in their action, without the slightest mutual interference, yet so asso-

ciated by means of the straps and loose spring-covers, that they present the appearance and act with all the convenience of a single instrument. Each spring, at its posterior extremity, re-enters the spring-cover of its fellow, and the strap of one truss passes smoothly through a passage beneath the commencement of that of the other, so that both sides appear symmetrical, as far as the springs and appendages are concerned, and the straps do not in the slightest degree embarrass each other. As the peculiarities of this instrument are confined to the spring-covers and straps, which are suited alike to the trusses for inguinal, ventro-inguinal, and femoral hernia, the instrument can be adapted, at a moment's notice, to any possible combination of these three forms of the disease, so long as the varieties exist on opposite sides of the abdomen.

The Committee cannot speak too highly of this beautiful invention, but it may be safely permitted to speak for itself.

V.—OF THE UMBILICAL TRUSS.

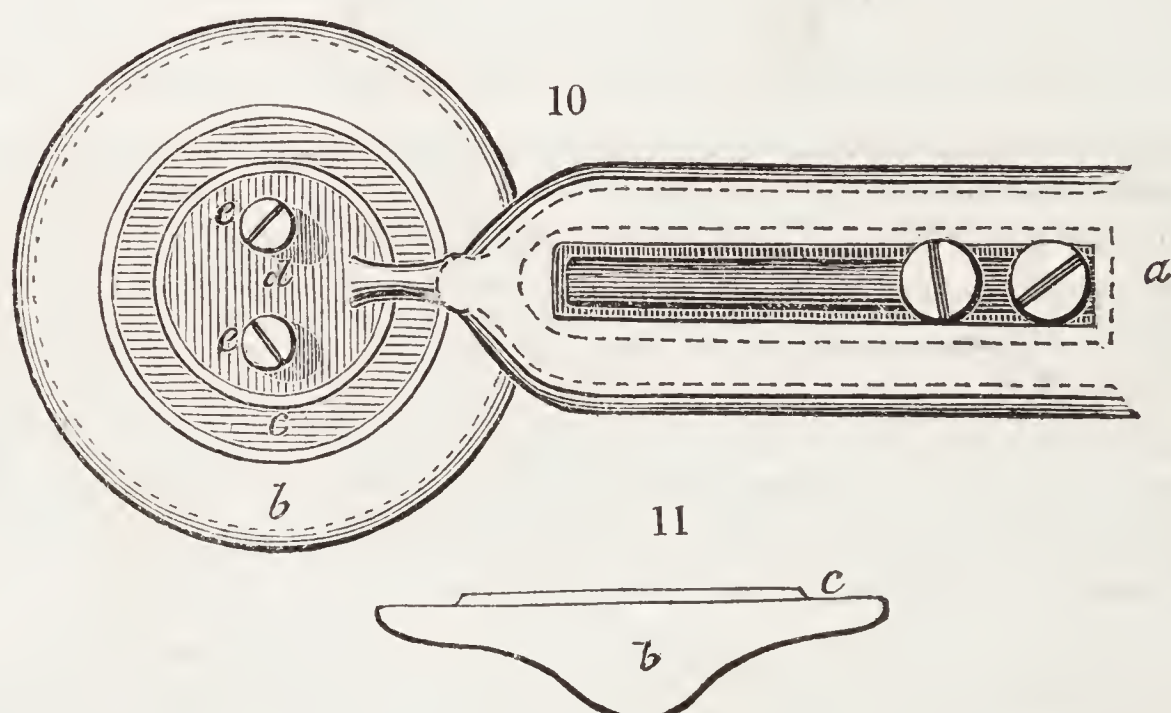


FIG. 10.—*a* The anterior end of the spring, with the same kind of spring attachment as in the femoral truss.—*b* The circular block.—*c* The circular block-rider.—*d* The circular iron disk supporting the block-rider.—*e e* Two button-headed screws attaching the rider to the disk, and serving at the same time to secure the strap.

FIG. 11.—Section of the circular block.

The peculiarity of the block in this instrument consists in its having a central prominence on the convex face, which prominence is a segment of a much smaller sphere than that which furnishes the margin of the block: it is thus made to correspond more nearly to the form of the parts about the umbilicus, while its effuse margin prevents the danger of too great absorption under its pressure.

The block with its brass rider is attached to a circular expansion on the anterior extremity of the soft iron neck, by means of two screws, one placed vertically about an inch above the other, and so formed as to serve at the same time as buttons, on which the strap is secured by means of a double series of eyelet holes. Of course, then, there is no mobility in this attachment. The only adjustment required is in a circular direction, and is accomplished by means of the following arrangement. The spring is placed horizontally: Its anterior extremity is provided with a fenestrum five

inches in length. The soft iron neck is about six inches long, and is secured to the spring by two screws which pass through the fenestrum, and may be made to slide therein precisely as those do which are seen in the corresponding part of the Femoral Truss.

The back-pad is made oblong instead of round, and is supported by two leather loops instead of one, as in the other trusses. It is arched transversely, and is about six inches long by four inches wide. This form is required to give support to the spring on the broad and flattened portion of the back.

This truss has secured the perfect and constant retention of the bowel in all the cases seen by the Committee, two of which were of a peculiarly unfavourable character. In Case XIX. the orifice by which the bowel protruded, extended for two and a half inches in the longitudinal direction, and one and a half in the transverse direction. The patient was enormously loaded with fat, and a block six inches in diameter was required to effect the retention.

In Case XXIV. the peculiar form of the sac and its enlarged tegumentary covering occasioned much embarrassment, as will be seen on reference, but it did not prevent success.

The only accident observed to result from the use of this instrument has been the slight excoriation or mucoid transformation of the skin where it is thrown into folds in consequence of the redundancy occasioned by the sac; an accident observable in bad cases only, one which is easily rendered tolerable by dusting the part with carbonate of zinc or other dry powders, and one, moreover, which is not dependant upon the character of the instrument employed. The Committee deem it, therefore, almost unnecessary to state their decided preference of this instrument.

VI.—OF THE UMBILICAL BELT.

The Committee will not detain the Society with any particular notice of this contrivance; but will merely state, in passing, that it is composed of a broad band of elastic caoutchouc tissue, armed with the block employed in the umbilical truss, and secured by means of a peculiar buckle. It possesses all the excellences of the best hernial belts, with better security against creasing than any of its predecessors. But your Committee deem all belts objectionable in the treatment of umbilical hernia, because it is impossible by such machines to effect the necessary pressure at the umbilicus without embarrassing the motions of the ribs and diaphragm in respiration; for the band acts equally at all points, exerting as much force in the lateral as in the antero-posterior direction. When the functions of the parts subjected to the action are taken into the calculation, it is evident that this arrangement is one exceedingly objectionable in a mechanical point of view. In the trusses, on the contrary, the elastic spring effects the necessary retention by its pressure on the back-pad and the block, which precisely counteract each other, and no more lateral pressure is required of the spring or strap than is requisite to protect the instrument from displacement by the friction of the clothes. In condemning the umbilical belt of Dr. CHASE, together with all its predecessors, the Committee feel much pleasure in stating that after practical tests which they did not deem necessary, it has been frankly relinquished by its inventor, although it has *effected radical cures in two cases*. (See Cases XX. and XXIX.)

One point of importance connected with the question of the retentive power of trusses is the constancy with which they are worn. The instruments of Dr. CHASE, regulated as the force of the springs now is, are worn day and night by the patients, and after the first week, very rarely continue to give any inconvenience. In order to enable patients to bathe and swim without danger of protrusion, this gentleman has constructed truss covers of India rubber cloth, *the varnished side turned toward the instrument*, which are designed to be used temporarily at watering places. They have been found to fulfil most perfectly the object of their construction.

As it regards the retentive power of the trusses which have been approved by the Committee, it has been tested in various manners, and severely. Some of the patients, while wearing them, have followed the most trying labours of the harvest field and the marble-yard; others have travelled hundreds of miles on horse-back, over mountainous countries. The subject of the worst incurable case of ventro-inguinal hernia,—which had destroyed his usefulness, notwithstanding his endeavours to retain the bowel by means of other instruments,—has since resumed his labours as a stevador and sailor; some have followed the chase, and leaped fences and dykes, gun in hand, &c., &c.; yet, since the instruments were brought to their present high state of perfection, the Committee know of no instance of protrusion under these exertions. In one case only, the bowel has escaped after the final adjustment, in consequence of carelessness on the part of the friends of the patient, a young infant. (Case XXV.) And in another instance, the insanity of the patient lead to the removal of the truss. (See Prel. Rep. Note II.)

Your Committee deem any further comment on the retentive power of the trusses of the second class altogether unnecessary. These instruments certainly fulfil to admiration the two grand requisites which they consider necessary to bring the chances of radical cure in hernia to a maximum.

The extensive remarks already made on the effects on the tissues, produced by the first class of trusses, render it unnecessary to enter at length on those attending the use of the instruments just described; the institution of a fair comparison will be sufficient.

The irritation occasioned by the blocks of Dr. CHASE is much less severe than that observed when blocks of the first class are employed. That they are capable of producing much irritation, if such a result be desired, is obvious from the history of the case to which reference was made in the last paragraph; in which case inflammation was intentionally brought on, in order to test the powers of the instrument. More or less primary redness has been observed in nearly all the cases, though there have been some in which it could not be distinctly recognised. Except in the case just mentioned it has been always inconsiderable and evanescent, unless the patient had increased it by disobedience to orders. It has never shown that disposition to produce callosity around the margin of the block, which was noticed in some of the cases treated with other instruments. The absorption consequent on the long continued application of the block takes place more slowly, and seldom brings the skin into quite as close approximation to the tendons beneath. In very fat subjects, the block sometimes becomes deeply embedded, but their size and generally rounded form appear to prevent all danger of absorption of the tendons under the pressure. The secondary hyperemia,

resulting from the functional debility of the compressed capillaries, is noticed in every case, but in less degree than when other hard blocks are used, nor does it continue so long after the removal of the instrument. The Committee have never seen inflammation supervening after the subsidence of the primary irritation. It is remarkable that in many cases, the capillaries have partially recovered their tone under the pressure of the blocks, and the secondary hyperemia has been diminished after the trusses have been worn for a considerable time. The redness resulting from this cause is of course noticed in patients who resort to any species of truss, and the Committee, not being willing to trust to their memory of past experience unaided by notes, cannot institute a fair comparison in this respect between the effects of soft pads and the blocks of Dr. CHASE. Their impression is that the effects of the latter are more obvious than those of the former, but that the difference is of no practical importance. Attenuation of the skin has not been remarked in any patient employing Dr. CHASE's trusses in their present state of perfection.

Definitively; the Committee have been unable to trace any distinct connexion between the superficial effects of these instruments, and the changes perceived in the tendinous margins of the hernial orifices noticed during the time of their employment, changes which will next claim our attention.

The absorption of the subcutaneous fat, &c., following the use of these trusses as well as those of the first class, being unaccompanied with any thing like adhesion between the integuments and the tendons beneath, the thin skin of the scrotum is reverted beneath that of the inguinal region with great facility; and in hernia located there, the precise condition of the edges of the hernial orifices may be examined by the finger in the most satisfactory manner, and the following results have been obtained by the inspection of a large number of cases.

The orifices of very large ventro-inguinial hernia are found to contract rapidly after the perfect adjustment of the block, so that a few weeks or months will sometimes suffice to reduce an opening which will receive three fingers, with the skin of the abdomen inverted to less than one half its original area. (See cases I. and XI.) These extreme cases have generally been found in persons advanced in life; and, as the length of time which has elapsed since the very commencement of our investigations is less than three years, many of the cases presented to us are necessarily of recent date, and the question of radical cure remains, in them, still undetermined—if indeed it be reasonable to entertain a thought of such an occurrence under circumstances so extremely unfavourable. But this may be safely said:—The contraction continues upon the increase in all the cases yet incomplete, and no assignable limit short of the natural dimensions of the external ring have been ascertained! The instances referred to, will furnish the Society with a tolerable idea of the importance of the results in the few cases which have been under observation for twelve months or more.

While this contraction is taking place, the tendinous margin of the ring appears to increase very gradually in thickness, and the impression is produced that the substance of the tendon is enlarged by an intestinal deposition. This deposition is decidedly soft at first, but though rendered by degrees more firm and resisting, it does not distinctly assume the well marked characters of the purely fibrous expansion in which it is formed, within any

period yet determined, at least so far as can be ascertained by the sense of touch.

In common inguinal herniæ, even when they have become nearly direct, and in ventro-inguinal hernia of recent date, or moderate extent, the contraction and thickening continue on the increase until the affected ring is often rendered smaller, and, sometimes, much smaller than in the normal condition. (See Cases V. and XXIII.) The progress of the finger in the attempt to penetrate the external ring is then resisted with decidedly more firmness on the affected than on the uninjured side, and this is obviously the case in one instance in which there appears to have been congenital weakness of the parts on both sides. (Case III.)

In common inguinal hernia, the upper orifice at the internal ring is entirely beyond the reach of examination, and it is only by analogy that we can arrive at any inference with respect to its condition. The same remark holds good in relation to the condition of the orifice in femoral hernia.

It is unnecessary to point out the influence which the changes just described must exert in preventing the exit of the intestine. They will be understood by the Society without further comment.

The Committee do not feel called upon officially to express any theoretical opinions as to the mode in which nature accomplishes the contraction of the tendinous orifice in hernia when treated by means of the instruments now under notice, but it is their duty to state that they cannot trace the agency of any irritation produced by the truss-blocks in the history of these changes. The letter of the Chairman on the *modus operandi* of Dr. CHASE's apparatus, as published in the treatise of the latter gentleman, contains a full account of the opinions of one of the members on this subject, and the remainder of the Committee are not prepared to combat the positions therein maintained. If the theoretical views alluded to be correct, the singular fact of the contraction of the ring to a size still smaller than the natural one would be accounted for either by supposing that there remained a persistent callosity about the orifice, like that which sometimes continues long around the track of an obliterated fistula, or that the union of ruptured fibres formed an irregular tendinous mass, like the surplus amount of new bone which is produced by the reuniting of a fracture. It is not impossible that both these causes may contribute to produce the appearances described, and it becomes, therefore, a question of much interest to determine how long the undue firmness of the ring may continue; or, in other words, how far the deposition about the margin is provisional, and how far it is permanent. It would be certainly surprising, though by no means impossible, that the cure, when effected, should give the patient better protection than he enjoyed before the accident. This point can only be decided after several years of observation upon the same cases, and it is recommended to the attention of the Society.

The sac, when thin or small, generally escapes observation, and is probably obliterated or returned before the conclusion of the treatment; but when large and thickened, it is found continually contracting and approximating to the orifice by degrees. It is not always wanting when the tests of radical cure are applied without producing protrusion: while it remains, it is generally found more or less distended with fluid. In the letter of the Chairman, already referred to, there will be found a notice of a curious case

of umbilical hernia, in which the sac remained, and presented its connexion with the cavity of the abdomen long after protrusion had been rendered apparently impossible by the contraction of the orifice, under the use of a block of lead, moulded to the form of the part: one case of inguinal hernia occurring in the practice of Dr. CHASE, was attended with somewhat similar circumstances. (Case V.) These may be regarded as remarkable exceptions to general laws, but they are sufficient to establish two important positions; first, that a perfect occlusion of the neck of the sac is not indispensably necessary to the permanent retention of the bowels by natural means; and, secondly, that the changes in the tendinous margin of the orifice are not *invariably* productive of such occlusion. The latter of these positions furnishes a most powerful argument against the doctrine that the changes just mentioned result from the irritation produced by the truss-blocks.

After all that has been stated, the committee feel themselves fully warranted in the following conclusions.

1. The retentive power of solid blocks is, *cæteris paribus*, superior to that of soft pads in the treatment of hernia, as has been already stated in the Preliminary Report.
2. The chances of radical cure depend upon the perfection and permanence of the retention.
3. The perfection and permanence of the retention depend—first, upon the mechanical action of the instruments; and, secondly, upon the power of the parts affected to bear that action without danger of physiological accidents of sufficient importance to interfere with the treatment.
4. All the instruments with solid blocks contrived before the recent inventions of Dr. CHASE, are decidedly liable to important mechanical objections, and all of them, with the exception of the Ratchet Truss, are moreover capable of producing physiological accidents of sufficient importance to interfere with the treatment.
5. The construction of the Ratchet Truss is such as to render retention uncertain even in ventro-ingual hernia, to which form of the disease alone, it is tolerably well adapted.
6. The instruments of Dr. CHASE have effected the permanent and accurate retention of the intestines in every case of hernia observed by the Committee, without material inconvenience to the patient, and often under trials more severe than are usually ventured upon by those who wear other trusses; trials which would be imprudent with any other apparatus known to the Committee.
7. If we except the Femoral Truss, these instruments have stood the test of much practical application without superinducing any physiological accidents of sufficient importance to interfere with the treatment.
8. The mechanical principles upon which the femoral truss is constructed appear highly ingenious and promising, and unless this instrument should be found hereafter to be productive of important physiological accidents, it must take precedence of all other modes of treating this variety of the disease. No such accidents are yet known to have been produced by its employment; but the Committee have not enjoyed the opportunity of personal inspection in a sufficient number of cases to determine general results, nor do they deem it proper to receive evidence from any other quarter in discharging the trust reposed in them by the Society.

The Committee are induced by the foregoing conclusions to recommend, in strong terms, the instruments of Dr. CHASE to the confidence of the profession, as the best known means of mechanical retention in hernia, and as furnishing the highest chances of radical cure.

The Committee have not deemed it necessary to institute a *numerical comparison* between the degree of success attending the use of soft pads and hard blocks in the treatment of hernia; for the testimony of the highest surgical authorities, their own experience, and the general feeling of the profession, sufficiently prove the rarity of the cure of hernia by any of the apparatus in use previously to the commencement of the present investigation. They think they have done the most ample justice to the claims of the older trusses by the statements contained in the Preliminary Report, (p. 324,) statements which are less opposed to the claims of common trusses than are the opinions of Professor Hey of Leeds, Tavernier, Abernethy, Sir Astley Cooper, and many other European authorities of the highest class.

Before endeavouring to estimate the chances of radical cure by the use of Dr. CHASE's trusses, it is necessary to determine what is meant by a radical cure.

A variety of facts have been collected by Dr. CHASE which tend to show that vices of formation predisposing to hernia are sometimes hereditary in families, and that congenital weakness of one abdominal ring is not unfrequently accompanied by a similar condition of the other ring, and also of the umbilicus. In cases of the latter description, hernia is occasionally observed consecutively or consentaneously in each of these positions. Facts of this nature have probably given rise to the opinion expressed by some recent inventors of double trusses for the treatment of single herniæ; namely, that the retention of a hernia on one side is like to produce a hernia on the other. The Committee see no foundation for this opinion, unless the strength of the spring of the truss be made much greater than necessary, or in cases of enormous hernia, in which the bowels have been allowed to remain protruded for so long a time that the abdominal muscles have become accustomed to an unusual degree of contraction.

Granting, however, for the sake of argument, that the liability to a consecutive hernia is increased by the retention of one already existing, the use of the double trusses in single hernia would still be objectionable, because the whole amount of pressure to which the abdomen is subjected by them is obviously at least twice as great as is necessary to effect retention, and hence the danger of consecutive umbilical hernia from the action of the instrument is at least doubled. It is obviously a task of extreme difficulty, if indeed it be not impossible, to guard against the occurrence of hernia at all its usual orifices, and the number of consecutive cases will probably be found to form a very small per centage on the whole number placed under treatment. The Committee, therefore, disapprove of the employment of trusses as a prophylactic measure.

Returning from this apparent digression, it does not seem proper to consider the consecutive occurrence of hernia in one situation as a disproof of the radical cure of a previous hernia in another situation.

As all men appear to be subject to this kind of accident under the action of certain forces, it would seem at first sight unreasonable to expect any course of treatment to effect a degree of security against the recurrence of the protrusion in any individual, greater than that which existed prior to

its first occurrence; and hence a cure may be fairly considered radical, without supposing the part affected relieved from the possibility of a reappearance of hernia at the same spot, under all possible circumstances and casualties.

The cases already mentioned in which the external ring has been contracted to a greater degree, and has been rendered firmer than natural during the course of treatment, tend to show that in certain instances the resistance to protrusion is greater after the cure than it was before the accident; and hence, that hernia from future injury would be more likely to occur elsewhere than at its first location. It is not unreasonable to suppose that this increased security may be sometimes permanent, but years of observation are necessary, as has been already stated, to determine how general the applicability of the rule may be.

In answer to the quere, then—What is meant by a radical cure?—the Committee conceive the following reply the fairest and most rational that can be offered.

A cure is radical, when the tendinous and fascial barriers to the egress of the bowel are brought or restored to their normal or original firmness and power of resistance.

The only means by which such a result can be tested, are the firmness and resistance of the orifice when placed where it is subject to examination, and the absence of all appearance of protrusion after the truss has been relinquished for some weeks or months, and after the patient has pursued his usual avocations, resorting frequently to more severe exercises, such as coughing, leaping, fatiguing walks, swimming, lifting, dancing, riding on horseback, &c.

A variety of causes have tended to reduce the number of cases in which the whole history of the accident, the treatment and the result has been placed within reach of the Committee. Among the most important of these may be mentioned, the extreme unwillingness of many patients to relinquish the use of the truss, even when urged to do so by the united advice of their surgeon and the members of the Committee; the removal of many patients to a distance after having been a long while under treatment, but before it has been deemed perfectly safe to lay aside the instrument; and the unwillingness of some persons to submit to the necessary examinations;—yet, notwithstanding these difficulties, the amount of indubitable evidence actually furnished on the question of radical cure has been considerable, though none has been relied upon as a basis for conclusions, except such as has been furnished by the actual examinations of one or other of the members of the Committee, and the testimony of the patients themselves.

All the individuals who have relinquished the use of the trusses approved by the Committee, after having worn them for six months or more, and who have been afterwards examined by a member or members of the Committee, have been subjected to the necessary tests, and are believed to be radically cured in the sense of the foregoing definition. A still larger number who are yet under treatment give promise of a similar result, and those who refuse finally to relinquish the instrument on the advice of their surgeon, present, in the firmness of the rings, and in the absence of protrusion under exertions performed when the trusses are temporarily removed, very strong grounds for believing the cure to be radical in them also.

Two cases only of old ventro-inguinal hernia, occurring in persons of

nearly sixty years of age, and so large that the orifices admitted of the free passage of two or more fingers within the reverted skin, have been deemed incurable; but even in these, the contraction of the rings, and the resistance to protrusion when the trusses have been removed by the patients for a few hours, render the impossibility of cure by no means certain; and it is deemed improper ever to subject the patients to the tests necessary to determine the question. The enormous umbilical hernia which is the subject of note marked Case XIX., is in all probability incurable.

The cases observed include all the usual forms of external hernia, whether resulting from mechanical or physiological causes; and also, some instances of double and triple hernia. The complications which have not been presented are known to be very rare, and the Committee therefore feel no hesitation in expressing a strong and, they think, well grounded hope that a very large majority of the cases of this dreaded disease will yield to the action of the apparatus of Dr. CHASE, when under the direction of persons of high surgical and mechanical abilities.

It has become a subject of regret, since a number of points of unforeseen interest are found to be connected with the subject, that the Committee have preserved detailed notes of only a few of the cases, and have it not in their power to furnish numerical data for determining the frequency of the several forms of hernia, the relative curability, and the time required for the successful treatment at different ages, together with many other highly important subjects of inquiry. This deficiency is in part supplied by the treatise of Dr. CHASE; and it is understood that a statement of the results of the treatment in Ohio, from the pen of a gentleman of high professional reputation, will shortly appear in one of the western journals. Should these examples be followed in other places, the science will be undoubtedly enriched by many curious and important results.

In their Preliminary Report, the Committee expressed decided opposition to the employment of trusses in infants. Candour demands the avowal, that further observations has shaken their opinion on this subject. Several cases treated at a very early age, by the instruments under notice, have proved that they are borne without inconvenience in infancy. Some instances in proof of this will be found noted among the evidence in the Appendix to this Report. The adaptation of the trusses to the comfort of children under three years of age, and their superior certainty of action establish their claim to preference over any other mode of treatment. Their applicability, within the year, has been successfully tested in two cases; and it is certain that more force is required to confine the bowels by any form of bandage or compress, than by means of a well regulated spring and block. The only comparative trial of the soft pad and the hard block in an infant, (Case XXIX.,) has resulted in favour of the latter; but the Committee feel bound to urge the necessity of high surgical skill, and extremely careful attention in dealing with these little subjects.

The time required for the radical cure of an ordinary case of ventro-inguinal or direct hernia in the adult, appears to be from twelve to eighteen months. It is probable that the bowel, in common inguinal hernia, is rendered secure in a shorter time, but prudence has prevented the earlier relinquishment of the truss except in a very few cases. The orifice in umbilical hernia, appears to contract somewhat more slowly, but all the varieties recover much more rapidly in childhood.

The evidence, of which circumstantial details are preserved, will be found in an Appendix to this Report; and a case of high interest occurring in the practice of Dr. Henry Bond, of this city, is added to the list in consequence of its collateral connexion with the question before the Committee, although no remarks will be made upon it on the present occasion. It will probably form the subject of some comments on a future occasion, by the Chairman in his individual capacity.

The Committee will close their labours by recommending to the Society the appointment of a new Committee, to collect evidence on the several questions noticed as undecided in the present Report.

All which is respectfully submitted.

REYNELL COATES.

ISAAC PARRISH.

APPENDIX.

CASE I.—*Ventro-Inguinal Hernia, of 10 years standing, from sudden lifting; age of patient 58 years; imperfect retention from Chase's Ovoidal Block; contraction of the ring; Chase's Umbilical Block substituted for some days; failure of retention; new Ventro-Inguinal Block employed; perfect retention; bowels retained for hours under exercise without the instrument in twelve months; further tests of radical cure deemed imprudent; truss ordered to be worn permanently; alteration of cord and testicle.*

This case was drawn up to the 5th of December 1835, in the Preliminary Report. (Case I. p. 314.) The plano-convex block, then in use, failed in maintaining the hernia so well as the ovoidal block previously employed for five months. It was, therefore, removed, and the new ventro-inguiual block applied. The ring had contracted very considerably under the previous treatment, if the testimony of the patient himself be deemed conclusive, but it still received two fingers with facility, and the bowel had protruded occasionally, notwithstanding the presence of the instrument, up to the 24th of December, 1835, about which time the new ventro-inguiual block of Dr. CHASE was employed. The retention continued perfect from that time until the Committee lost sight of the patient in August, 1836.

July 11th, 1836.—The patient, examined by the chairman, states that he has had no return of colic since the new block was employed. The ring was found a little larger and less resisting than that on the opposite side, the edges somewhat thickened but softer than the original structure. Though ordered to wear his truss at all times, he repeatedly relinquished it during the month of June, and passed from his chamber to the yard, ascending and descending the stairs without it. Once, at night, when he had laid aside the instrument on retiring, he rose, and ran to a fire, at a considerable distance, not discovering the omission until his return. Not the slightest sign of protrusion took place during these exertions. The age and profession of this patient, coupled with the extent of the orifice, was thought a sufficient reason for avoiding any intentional tests of the radical cure of the hernia in this case, and the patient was enjoined to continue the use of the truss during life, notwithstanding the progress of the case had so far transcended any anticipation entertained by the Committee at the time of the Preliminary Report.

The patient was seen by members of the Committee several times after the 11th of July. This truss gave no inconvenience, and he stated that he was generally unconscious of its presence. He had renewed his labours as a ship watchman, and frequently assisted in unloading vessels.

Jan. 12th, 1837. This patient has gone to sea as a sailor, and the Committee have lost sight of him.

There were some circumstances of peculiar interest in this case. On the 11th of July, 1836, the spermatic cord on the affected side was found enlarged to at least three times its natural size. It was soft, and did not feel as if the veins were varicose. The corresponding testicle was much reduced in size and felt like a mass of œdematous cellular tissue enclosed in a firmer, but ill-defined cyst. The sac still continued very thick but had contracted to about one third of its former dimensions. The parts were critically examined by Drs. HORNER and HAYS, and by the Chairman of the Committee. Some doubt existed as to the complete adhesion of the neck of the sac; one of the gentlemen mentioned being convinced of its occlusion; another being of opinion that it remained pervious, and the third declining to decide the question.

Dr. R. COATES was inclined to attribute the enlargement of the cord to an interstitial deposit of the consistence of jelly, and the alteration of the testicle to absorption from an embarrassment of circulation for many years, occasioned by the continued pressure of the protruded intestines and ill-adapted trusses.

CASE II.—*Common Inguinal Hernia, from a fall; seven years standing; age of patient 13 years. Radical cure in six months, under the use of Chase's Common Inguinal Truss.*

This case is narrated to Dec. 5th, 1835, in the Preliminary Report, (Case II. p. 315.)

April 2nd, 1836. Examined by the Chairman. The external rings on both sides offer the same resistance to the finger, and appear to resemble each other exactly. The patient feels no sensation of weakness or other symptom of the existence of hernia. He has seldom had recourse to his truss since the 5th of Dec. 1835; having only employed it when resorting to unusual exertions. Pronounced cured and ordered to lay aside the instrument entirely. The depression of the integuments beneath the block has entirely disappeared, as has also the redness.

Jan. 11th, 1837. The lad continues perfectly well. Has not worn his truss since the last date. He is radically cured.

CASE III.—*Common Inguinal Hernia; four months standing; age of the patient about 30 years; congenital enlargement of the lower part of the abdomen; both external abdominal rings preternaturally large and weak; ring on the affected side rendered smaller and firmer by the treatment. Radical cure in thirteen months.*

This case is drawn up to Oct. 24th, 1835, in the Preliminary Report, (Case III. p. 315.)

Feb. 1837. (Day of the month not noted.) The patient omitted the application of the truss, occasionally, from May to July, 1835, and even worked in the harvest field without it. In July he was advised to relinquish it entirely, being pronounced cured. He has not steadily complied with this wish. The external ring on the side affected is now decidedly smaller and more resisting than that on the other side. Its edges are thickened. Ample testing, by vigorous exercise without the truss has been resorted to. The patient was strongly pressed to relinquish the truss entirely, by the

Chairman of the Committee. He is believed to be radically cured, but liable to hernia on the opposite side of the abdomen from slighter causes than usual, owing to the original structure of the abdomen.

CASE IV.—*Common Inguinal Hernia, from Pertussis; accident of seven years standing; age of patient 9 years; treated by Stagner's or Hood's block for some months, then by Chase's Inguinal Truss; retention by the latter perfect after three days. Radical cure.*

March 29th, 1837. This case is detailed to Dec. 5th, in the Preliminary Report, (Case IV. p. 316.) The patient has been repeatedly before members of the Committee, since the last date, but nothing peculiarly worthy of comment has been observed except what is contained in the following note of his father, which communicates the result. He is believed to be radically cured.

Philadelphia, January 14th, 1837.

GENTLEMEN:

I wish to inform you that my son I believe to be quite well of his rupture. He is now gone to — to a boarding-school, and before he left, I examined him carefully, as I have been in the habit of doing while he was under the care of Dr. CHASE. His bowel has never been down, to the best of my knowledge, since the first application of the instrument. He has never complained of pain in the part. He did not take his truss with him, as I did not think it necessary. I do not know the time that he laid aside the truss, but I think it might be in April last. H— C—.

DRS. COATES, PARRISH and ASHMEAD.

CASE V.—*Common Inguinal Hernia, of one month's standing, from running violently; age of patient about 35 years. Radical cure in five months.*

This case is detailed up to Dec. 5th, 1835, in the Preliminary Report, (Case V. p. 317.)

Feb. 1837. (*Day of the month not noted.*) This patient states that soon after the last note of the Committee, he was alarmed by the appearance of what he mistook for the return of hernia, but on applying to Dr. CHASE, he was convinced of his mistake. The latter gentleman in his treatise already quoted mentions that sometime after the 5th of Dec. 1835, he consulted him several times under this impression.—(p. 148.) He is decidedly a hypochondriac. At his own instance, the truss was reapplied, though deemed unnecessary. Sometime afterwards, his surgeon represents, that he had an accumulation of serum in the sac; a circumstance which, as Dr. CHASE justly remarks, is not uncommon during the treatment of hernia, even when accurately retained, and which need not occasion alarm. This serum retired into the abdomen on pressure, proving that the neck of the sac was not, at that time, obliterated.

No signs of the sac are now traceable, and no remains of the effusion have been visible for a long time. There appears no reason to believe that the latter had an abdominal origin.

The patient occasionally relinquishes the truss for a time, but labours under nervous timidity with regard to a relapse. The Chairman of the Committee, by whom the last examination was made, strongly urged the

entire abandonment of the instrument, on the plea that the unnatural and unnecessary support might eventually produce weakness by removing the necessity of the functional exercise of the part; but it is not probable that the patient will permanently adhere to the advice, as the truss gives him no inconvenience. He is believed to be radically cured.

The apparent anomaly of the preternatural diminution and firmness of the ring, noticed in the Preliminary Report, which could not be explained at that time, has been proved to fall within the range of a general law, by the subsequent observations of the Committee. It is now still more remarkable than when first noticed.

CASE VI.—*Common Inguinal Hernia, of many years standing; age of the patient supposed to be about 35 years; cause unknown; imperfect retention by the best English Trusses; also by Stagner's or Hood's block; perfect retention by Chase's Inguinal Truss.*

The Committee lost sight of this case soon after the last date in the Preliminary Report. (p. 317.) The tests of the retentive power of the instrument were violent, but the question of radical cure could not be solved, as the gentleman left Philadelphia while under treatment. Dr. CHASE states that when last seen by him, in March, 1836, the patient was not wearing the truss and had not experienced any protrusion.

CASE VII.—*Ventro-Inguinal Hernia, of several years standing; age of patient 33 years; relief, and prospect of cure from Chase's Common Inguinal Truss.*

This patient is the subject of the seventh case of the Preliminary Report. He has disappeared, and the Committee know nothing of his history after January 24th, 1836. His condition then gave promise of cure. The case has not been seen since the invention of the Ventro-Inguinal Truss.

CASE VIII. *of the Preliminary Report; Femoral Hernia.*

This patient is said to have had no return of the protrusion, but she is represented as still using the truss. The Committee have had no opportunity of examining this case at any time, and are not acquainted with its history since November 30th, 1835.

CASE IX. *of the Preliminary Report; Congenital Hernia.*

This case has not been heard from since December 4th, 1835.

CASE X.—*Femoral Hernia, of two years duration; age of patient 30 years; Hood's Femoral Block not permanently tolerated; other trusses producing imperfect retention; apparently perfect retention by Chase's Femoral Truss, with the Ovoidal Block; perfect retention by the new Femoral Truss; radical cure.*

This patient is the subject of a note by Dr. Ashmead in the Preliminary Report, q. v. (Case X., p. 319.)

March 29th, 1837.—The truss has been occasionally worn, in this case, up to the present time, but only for a few hours at a time, during unusual exertions. The new femoral block of CHASE was substituted for the ovoidal block soon after the invention of the former. This occasional use has prevented the return of the subcutaneous depositions, and the patient states

that the block "embeds itself so that the shoulder, or projection, dips underneath a sharp edge of something which I suppose is Poupart's ligament, and, whenever it is applied, rises up under it." This is his own phrase. The depressed skin now plays freely over the parts beneath, so that no adhesion exists between the integuments and the hernial orifice. The Committee have enjoyed no recent opportunity of witnessing the position of the truss. Neither the old nor the new Femoral Trusses have given any material inconvenience.

The patient assures us that the action of Hood's Femoral Block, which had been previously employed, though when in its intended position it apparently retained the hernia, "could not be borne for any length of time, and that, as soon as it was moved, the bowel descended." It produced great inflammation, and a sore over Poupart's ligament, which confined him for two weeks to his bed. The orifice in this case must have been large when the treatment by wooden blocks commenced, as the bowel then slipped down and was returned by the fingers with the utmost facility. The descent always took place on walking across the floor of a room.

Since the time of the Preliminary Report, he has tested the cure by pursuing his usual avocations, swimming and other severe exercises, for weeks together, without any application of the truss. His occasional use of the instrument is made entirely at his own suggestion. He is considered radically cured; but, whether the result has been obtained solely by the old, or partly by the new Femoral Truss of Dr. CHASE, the Committee will not attempt to determine. Reference to the Preliminary Report will show that the cure was far advanced while the ovoidal block was in use.

The Committee place much confidence in the representations of the patient himself in this case, as he is a gentleman of education and intelligence.

CASE XI.—Large Vento-Inguinal Hernia, of many years standing; producing ill health and disability; age of patient 60 years; complete relief and perfect retention by Chase's Vento-Inguinal Truss.

This is the case marked Note I., in the Preliminary Report. The estimable and companionable old gentleman who is the subject of it, has been seen several times by the Committee during the year 1836. He has been restored from a condition which rendered life almost a burden, to one of high comfort and enjoyment. The Preliminary Report displays the effect of the ovoidal block in securing *the permanent*, but probably *not the accurate*, retention of the bowel, for he could only venture upon very moderate exercise with safety, and continued liable to much abdominal uneasiness at times, until the ventro-ingual block was brought to perfection, and substituted for the previously applied and worse adapted one. Since that time he has been restored to perfect health, walks long distances without suffering, has passed a season in his favourite amusement of trout fishing among the mountains, and wears his truss with scarce a perception of its presence. During occasional relinquishment of the instrument, which has now and then continued for some hours, no signs of protrusion have occurred. No accurate examination of the ring has been made for a long time. It is deemed altogether improper to test, in this case, the natural powers of retention, and the instrument will be worn during life.

CASE XII.—*Common Inguinal Hernia; Stagner's or Hood's Block employed; deep linear depression of the integuments; absorption of a portion of the tendon of the external oblique muscle; perfect retention by Chase's Vento-inguinal Truss; improved condition of tendon; case still pending.*

The commencement of the history of this case will be found in Note IV. of the Preliminary Report, (p. 321,) and was written in December, 1835.

March 5th, 1837. The patient was examined by the Chairman of the Committee this day. Dr. CHASE states that the patient continued to wear the truss with Stagner's or Hood's Inguinal Block, for three or four weeks after the examination in October, 1835, in consequence of neglecting to call on his surgeon agreeably to appointment. This unfortunately led to a more rapid alteration of the part of the tendon pressed upon than was calculated on, either by the Committee or his surgeon. The new Vento-inguinal Truss was applied as soon as completed. The present condition of the parts about the orifice is as follows.

The integuments are still considerably depressed in consequence of the subcutaneous absorption, but the block applies itself equally over a wide space, without bearing too forcibly on the tendons. The retention has been perfect from the first. The skin is not rendered preternaturally thin. It is slightly red from the debility of the capillaries produced by pressure, but there are no signs of irritation about the part. The skin slides over the parts beneath with the greatest facility, proving the absence of adhesions.

The usual resistance to the finger offered by the abdominal parietes is wanting over a space of about two fingers breadth, running perpendicularly upward from the edge of the os pubis at the site of the external abdominal ring. The existence of the tendon of the external oblique muscle is obscure throughout this space, and is not perceptible at all toward the lower part of the space. On reverting the skin of the scrotum before the finger, into the external ring, the internal column is found well defined; the external column is indistinct. The tendon can be felt in a healthy condition far to the right, but appears gradually reduced to mere cellular membrane as it approximates to the ring, the upper margin of which cannot be determined by the sense of touch. The spermatic cord is felt throughout nearly the whole length of the abdominal canal, with such extreme distinctness that it might be supposed to be covered only by a thin layer of free cellular membrane. Dr. CHASE thinks that the absorption of the tendon was considerably more extensive than at present, at the time of the removal of the instrument formerly in use, and that the restitution of the natural structure is now making slow progress. On this point the Committee have no knowledge from personal observation.

CASE XIII.—*See Note V. of the Preliminary Report, (p. 321.)*

This case has not been again presented to the Committee. The patient was thought to be radically cured when the note, to which reference has been made, was written.

The foregoing details complete the history of all that is important in relation to the cases which were made the subject of comment in the Preliminary Report. The patient mentioned in Note II. (p. 320,) of that paper, has been much deranged, and his insanity has interfered with the treat-

ment. He is no longer under the observation of the Committee. The cases described in Note III. (p. 320,) and Note VI. (p. 321,) have not been heard from since those notes were written.

CASE XIV.—*Common Inguinal Hernia, of about one year's standing; age of patient 27 years; radical cure in seven months.*

This patient, a female, was ruptured on the right side, during unusual exertion while preparing for a voyage from Ireland to this country in 1834. No surgical advice was taken until October, 1835, when she was directed to the care of Dr. CHASE by Dr. ISAAC PARRISH.

The details of the case will be found at length in "Chase on the Radical Cure of Hernia," p. 162.

April 19th, 1836. Patient examined this day by the Chairman. The Inguinal Truss of Dr. CHASE was applied on the 20th of April, 1835. The woman states that she suffered some pain, but not a great deal, from the action of the first truss. Another, with a block and spring more suitable to the formation of the individual's pelvis, was substituted on the 31st. The irritation then subsided, and the truss produced no more complaint. The retention was complete, from the first application on the 20th of October. The woman being far advanced in pregnancy, the truss was laid aside on the fourth of last month. No protrusion has taken place. She has a very large abscess of the left breast, which was opened by the lancet this morning.

May 16th. Seen by Drs. CHASE and R. COATES. Patient was delivered with rapidity on the 4th instant, and suffered severely with after-pains. It is thought that this test of the security of the retentive power of the abdominal tendons and fascia is sufficient to warrant complete reliance upon it, and the patient is directed not to resume her truss on leaving her chamber.

July 11th. Again visited by the Chairman. She is pursuing her usual avocations, and is pronounced radically cured.

March 30th, 1837. This patient continues perfectly well. On reviewing the notes, the Committee think it right to mention that the absence of protrusion during the last months of pregnancy, and even during labour, is a fortunate and not unfrequent result of the position of the gravid uterus, which displaces the intestines from their usual position. It was therefore the absence of protrusion during continued and severe after-pains which alone induced the conclusion that the cure might then be safely considered radical. These remarks are intended as a caution to the inexperienced, who might naturally conclude that the absence of all symptoms of hernia in the inguinal or femoral region, during the latter months of gestation and the period of labour, was a sufficient proof of the non-existence of the disease. In umbilical hernia, continued retention during the latter moments of labour would indeed be a strong argument in favour of the radical cure.

CASE XV.—*Common Inguinal Hernia, of seven years standing; age of patient 12 years; radical cure in seven months.*

Dec. 4th, 1835. CHASE's Inguinal Truss was applied on the 27th of November last. Some redness from irritation is visible when the truss is removed, but no inconvenience is felt from it. The retention has been constant and perfect from the first.

April 1st. There has been no protrusion. No difference between the size and resistance of the two rings can be distinguished on reverting the skin

of the scrotum before the finger. Some redness continues, but the patient insists that he is seldom aware of the presence of the instrument. There has been much less subcutaneous absorption than usual in this case.

June 22nd. Examined by the Chairman. The patient has often removed his truss for some hours at a time; he has taken walks, and has gone on swimming excursions repeatedly without it.

The opposite sides of the abdomen now appear perfectly similar in all respects. The redness and depression beneath the block have both disappeared. The case is believed by the Chairman to be radically cured, and he strongly advises the discontinuance of the truss.

March 31st, 1837. This little patient has been repeatedly seen by members of the Committee since the last date, and was critically examined by the Chairman in February. He wore the truss occasionally for some weeks after the 22nd of July, 1836. He is now perfectly well, vigorous and active.

CASE XVI.—*Ventro-inguiual Hernia, of six years standing; age of patient 10 years; cure radical.*

Feb. 26th, 1837. This case is fully detailed in Dr. CHASE's Treatise, (p. 166, Case XX. q. v.) but has only been seen by the Chairman of the Committee on the present occasion. The Ventro-inguiual Truss was applied December 13th, 1835. The patient testifies that there have been no signs of protrusion at any time since that day. Dr. CHASE considered the patient radically cured June 20th, 1836, six months after the commencement of the treatment, as prior to that time, by the patient's own showing, he had repeatedly left off the instrument during bathing excursions; but the boy's father compelled him to continue the use of the truss. He has more recently laid it aside on many occasions for several days together; has cast it off entirely for the last two weeks, and has been enjoying himself in skating on three different days without any protrusion whatever. The external ring is about the natural size, and there remain no marks of a truss ever having been used in the case, except in the persistence of a slight subcutaneous puffiness in the parts beneath the block. The patient is now radically cured, whatever may have been his condition on the 20th of June, 1836.

CASE XVII.—*Direct Inguinal Hernia, from coughing in an attack of asthma; case of four years standing; age of patient 45 years; radical cure of the hernia; persistence of the asthma.*

The details of this case will be found at length in "CHASE on Hernia," p. 167. The patient was first seen by the Chairman of the Committee, July 10th, 1836. He then stated that he had laboured under hernia for nearly five years. The orifice is stated to have been large and direct. It originally admitted two fingers. The old common truss had been employed, but the bowel frequently descended beneath the pad. Dr. CHASE first saw him October 28th, 1835. Hood's Parabolic Block, with CHASE's Truss-spring, was applied. The retention was perfect till the 30th of October, when an attack of asthma occasioned a protrusion. A truss with a firmer spring was employed, and the retention continued constant during the whole course of the treatment. After the introduction of CHASE's new Ventro-inguiual Truss, it was applied in this case, but the Committee possess no note of the date of this substitution.

July 11th, 1836. Examined by the Chairman. The truss now in use

(CHASE'S Ventro-inguinal) has never given any inconvenience—all those previously employed had done so. The patient performs all his duties as a master stone-mason with composure and ease—a former fracture of the patella leading him to avoid very heavy lifting, by the advice of Dr. HARTSHORNE. In the early part of last month he left off his truss for ten days, and pursued his business without any accident; for which he was censured, and directed to continue the application of the instrument. The edges of the ring are now well marked and somewhat thickened, but are very little less contracted than on the sound side.

April 1st, 1837. Some two months ago this patient was seen by the Chairman. He continued to wear his truss occasionally when performing heavy lifting, and during attacks of asthma. Since that time he has been lost sight of by the Committee. No signs of protrusion have ever appeared during the considerable periods for which the truss has been relinquished, although no particular care has been used to avoid exertion in the pursuit of his usual avocations in the marble yard.

CASE XVIII.—*Inguinal Hernia, of four weeks standing, caused by an accident in riding on horse-back; age of patient 30 years; radical cure in seven months.*

The details of this case will be found in CHASE on Hernia—(Case XXIV. p. 171.) The bowel burst into the abdominal canal, near the middle of its track, not having passed through the internal ring at all. The internal orifice did not correspond with the external ring, but remained concealed beneath the tendon of the external oblique muscle. The Inguinal Truss was applied by Dr. CHASE, December 4th, 1835, and it was ordered to be laid aside July 17th, 1836. After the adjustment of the instrument, which required some more care than necessary in common inguinal hernia, it was worn day and night for about four months, and in the day time only for nearly three months longer.

Jan. 1st, 1837. Examined by the Committee. The patient states that he has never suffered a protrusion, from about the 10th of December, 1835, (one week after the first application of the truss,) to the present moment. He wore the instrument occasionally from the time he was ordered to relinquish it until about the 1st of December last, since which he has not applied it at all. The ring is now quite as firm and small, if not more so, than that on the opposite side. The parts formerly pressed upon by the truss, display not the slightest traces of its presence. Much adeps covers the lower part of the abdomen. This patient is considered radically cured.

CASE XIX.—*Umbilical Hernia, of many years standing; enormous orifice; complete retention by Chase's Umbilical Truss, with a block six inches in diameter; patient restored to usefulness, but deemed incurable.*

The details of this most interesting and still pending case, will be found drawn up to the 25th of July, 1836, in CHASE on Hernia, p. 174, (Case XXVIII.) The orifice, as measured by the Chairman, May 30th, 1836, was two inches and a half long by one and a half wide, running along the linea alba above and below the umbilicus; the sac, with the integuments covering it, was very large, and flabby after reduction. Dr. COATES thought that caution would be required in applying the truss, lest the whole mass should be reverted bodily within the abdomen! The patient was excessively fat.

A truss with a block six inches in diameter, was applied for some months, one of seven inches diameter was afterwards found preferable. The overlapping of the loose sac, which formed a soft cushion beneath the block, gave rise to excoriation and mucoid transformation of the skin, which was relieved by dusting with the impure carbonate of zinc. On the 17th of July, the orifice was contracted to at most half its former dimensions, and the sac had become diminished at least one-fourth.

April 29th, 1837. The patient was examined, and the truss removed by the Chairman this day. The sac, loose, flabby, and perfectly empty, even of serum, but not obliterated by adhesion, still remains, but is much diminished in size. There is no irritation of the surface, the parts being perfectly accustomed to the pressure of the instrument. The enormous obesity of the patient makes an accurate examination of the linea alba exceedingly difficult, but no signs of the hernial orifice could be ascertained by the finger. The truss was reapplied. The patient is perfectly comfortable, and attends to laborious duties with impunity.

CASE XX.—*Umbilical Hernia, of 21 months standing; age of patient two years; radical cure in five months by Chase's Umbilical Band.*

Of this case the Committee have no knowledge other than that derived from the mother and the surgeon, until after the completion of the cure. Attempts to relieve this patient (a female) by pressure with the hand when it cried or used exertion, were made without effect; but it is not certain that they were very faithfully made. The orifice is described to have been large enough to admit the end of the thumb with facility. The band was applied February 15th, 1836. Retention was constant and perfect, and the band was finally removed on the 12th of July. CHASE on Hernia, (Case XXVII., p. 173.)

January, 1837.—Day not noted. Case examined by the Chairman. There has been no protrusion since the band was first adjusted. No signs of the sac appear. The linea alba, where the opening was located, is now firm, but not quite so much so as the remainder of that tendinous expansion. The child is active and playful. She is considered radically cured.

CASE XXI.—*Congenital Hernia; truss applied at the age of two months; radical cure in twelve months.*

April 1st, 1837. This case is noted in order to show that very young children endure the truss without inconvenience, which is contrary to the opinion expressed in the Preliminary Report. The nurse states that Dr. CHASE applied the little Vento-Inguinal Truss, which was shown by her to the Chairman, when the child was two months old. It is proper to mention that this instrument is preferred in all the varieties of inguinal hernia, occurring in children under five years of age, as it is better adapted than any other to the prominent abdomens and diminutive canals of these little patients. The truss was finally removed at the age of one year. The infant is now fourteen months old. The nurse insists that the truss never occasioned any inconvenience to the child, and very little redness of the part. The block rested directly on the skin for the greater part of the time, but occasionally the nurse inserted beneath it a layer or two of linen. The child is now radically cured. It is scarcely necessary to remind those who have

attempted the employment of trusses, with soft pads, in young infants, how much more severely the skin is usually affected by them.

CASE XXII.—*Common Inguinal Hernia, of many years standing; age of patient 27 years; radical cure in twelve months.*

The facts of this case, so far as the treatment is concerned, are taken from the statement of the patient, a highly intelligent gentleman, and the dates are added from the notes of Dr. CHASE. (CHASE on Hernia, Case XXXI. p. 177.)

The accident occurred in childhood. From the time when the disease was first perceived, to the 20th of January, 1835, a variety of trusses were successively employed, and neither care nor expense was spared in the selection. Not one of these instruments prevented the frequent descent of the bowel. The intestine escaped but once after the first application of CHASE's Inguinal Truss, which was made on the day just mentioned. This protrusion occurred within three days of that time, and led to the employment of an instrument with a stronger spring. The latter was worn without inconvenience, and produced scarcely any irritation. The truss was finally relinquished in January, 1836.

February 12th, 1837. Patient seen by the Committee. He states that since he laid aside the instrument he has performed a fatiguing journey to the west on horseback, sometimes travelling fifty miles in a day. He has used much exercise of all kinds, and yesterday inhaled the nitrous oxyde gas. He is muscular and powerful.

The radical character of the cure is most amply proved in this case.

CASE XXIII.—*Common Inguinal Hernia, of four months standing; age of patient about 45 years; radical cure in less than six months.*

February 26th, 1837. This patient called at the office of the Chairman. He is by trade a weaver, and stated that he became affected with hernia about the 1st of April, 1836. CHASE's Inguinal Truss was applied August 1st, 1836, and it was finally relinquished a few weeks ago. The man has continued at his trade up to the time of this note.

There are some traces of the secondary hyperemia still remaining on the parts which have been pressed upon by the block. No other external signs of its employment are discoverable.

The external ring, on the affected side, offers much more resistance to the finger, and is much more contracted than that on the other side. The patient is pronounced radically cured.

CASE XXIV.—*Sub-Umbilical Hernia, of many years standing; female about 35 years old; sac globular and pediculated; contraction of orifice and apparent obliteration of the sac; case still pending.*

Notes by the Chairman. November 29th, 1836. This female had a hernia through the linea alba, commencing about half an inch below the cicatrix of the umbilicus, and the circular orifice being about half an inch in diameter. The sac was surrounded by integuments much loaded with fat and densely fibrous cellular tissue, forming a globe nearly three inches in diameter, attached by a short pedicle as large as the middle finger.

The bowel filled this sac very readily on slight exertion, and was as

readily reduced. Strangulation had been repeatedly threatened. When the bowel was returned, the sac was found to contain abdominal serum, which could be instantly expressed, but slowly returned on the removal of pressure. The distension was not sufficient to support the weight of the globe, which hung down against the abdomen. CHASE'S Umbilical Truss was applied on the orifice, the pedicle being pressed downward out of the way.

January 13th, 1837. The tendinous orifice has been contracted to the diameter of three-eighths of an inch. The globular sac has been diminished very considerably. Its pedicle has been thrust down by the pressure of the block, until it appears as if attached entirely below the orifice of sac which has become flattened; while the walls are thicker and the subcutaneous cellular and adipose tissue is much more condensed, so that what was formerly a globe, now strongly resembles a condylomatous tumour, except that the contracted serous lining of the cavity remains apparently unaltered in texture, and has formed no adhesions in the interior. The neck of the sac is probably closed, as there is no appearance of abdominal serum within. When the hernia is cured this excrescence may be safely and readily removed by the knife; for the present it is reverted upward and will be employed like a cushion beneath the block and over the orifice.

This singular hernia may probably have been produced by a small fatty tumour of the peritoneum forcing its way between the fibres of the tendon, and followed by the bowel forcing the tumour with its attachment bodily through the opening. See ABDOMEN, *fatty tumours of*, in the *Amer. Cyclop. of Pract. Med.*

April 29, 1837. Examined by the Chairman. The orifice is not discoverable; its site being again concealed by the base of the tumour, since it has been turned up in the form of a flap beneath the block. The sac now appears to be obliterated by adhesion or contraction, and the tumour is inflamed and slightly ulcerated, but gives the patient no pain. The case is from the country, and cannot have the advantage of constant surgical superintendence. Dr. COATES recommended that if the tumour should prove troublesome, it should be removed by the scissors or ligature.

CASE XXV.—*Note by Chairman; Common Inguinal Hernia; Truss applied at the age of fourteen months.*

This note is made merely to illustrate the applicability of trusses to young infants.

Nov. 18, 1836. The child is now eighteen months old. He has worn CHASE'S Vento-Inguinal Truss four months, and has never suffered any considerable inconvenience from the pressure of the instrument, although the story of the mother betrays both ignorance and unwarrantable disobedience of orders in the management of it, and in consequence of these circumstances, temporary protrusion has frequently occurred. Still, the child's health, which was previously injured, apparently by abdominal irritations occasioned by the hernia, has been much improved during the action of the truss. The action of the block in this case, as in most instances of common inguinal hernia in young children, was confined to the neighbourhood of the internal and did not extend quite to the external ring. The attempt to approximate the edge too closely to the symphysis pubis, would, probably,

occasion some trouble in the management of the perineal strap. The Committee have never seen ventro-inginal hernia in very young children.

CASE XXVI.—*Inguinal Hernia supposed to be Congenital; age of patient about 22 years; Permanent Retention by Hull's Truss for eight years; Ring not obliterated; Testicle reducible; Cure believed to be radical by the use of Chase's Inguinal Truss in eight months.*

April 8th, 1837. This patient is an intelligent young graduate from the country. His hernia was retained constantly by Hull's Truss for eight years. He believes there was no protrusion in all that time; yet on the day of its relinquishment, the bowel protruded.

He believes that he was then able to return the testicle into the abdomen at will; but in this he may have been deceived by its disappearance beneath the skin of the abdomen. He states that CHASE'S Inguinal Truss was applied Feb. 18, 1836. It was worn constantly by day and night until the month of October, 1836—he then relinquished it entirely. This day the parts present no trace of the action of the truss. The external ring is somewhat larger than its fellow the opposite side, but no symptoms of a tendency to protrusion have been present at any time since the moment of relinquishing the instrument.

CASE XXVII.—*By Dr. Parrish; Double Hernia; ill health from its imperfect retention with trusses; Chase's Double Truss employed; perfect retention; improved health; case still pending.*

S. M., a lady about thirty-two years of age, applied to me in the summer of 1836, affected with ventro-inginal hernia on the right side, and common inguinal on the other. She stated that about thirteen years ago she felt something give way while lifting a heavy weight. She felt sick and vomited, and was confined to her bed for several days. On getting up she discovered a small tumour in the left groin. She consulted an eminent surgeon, who applied a truss with a soft pad. She wore this instrument for five years, and it retained the bowel. About eight years ago she went into the country and threw off the truss, but found herself still liable to protrusion in this situation; after which, she took a long walk over a hilly road, and found herself affected with a hernia of the opposite side. She then applied a double truss, which she has worn ever since. During the whole of this period the patient has been subjected to great inconvenience, and frequently to severe attacks of pain from the imperfect retention of the bowel, and from the difficulty of adapting instruments to the parts. Her health is much impaired. She is subject to attacks of colic, poor appetite, pain after eating, &c. I advised a trial of Dr. CHASE'S Truss.

7th Mo. 9th, 1836. The patient called to inform me that she had been wearing Dr. CHASE'S Double Truss for about four weeks. It produced, for the first few days, great inflammation and soreness about the groins. The parts, however, soon became accustomed to it, and she experienced great relief from the instrument. Her appearance is much improved; her digestion good; she enjoys more comfort than she ever experienced under the use of any other instrument. The bowel is perfectly retained. She finds

it very important to have the instrument accurately adapted. She found some difficulty in accomplishing this at first.

1st Mo. 12th, 1837. S. M. called on me to-day to say that she still continues to wear Dr. CHASE's Truss. Her health is now good; she is entirely free from dyspeptic symptoms; experiences no pain from the instrument, and uses active exercise without causing pain. There has been no descent on the removal of the instrument for three months past. She considers the instrument far superior to any other in point of comfort.

CASE XXVIII.—*By the Chairman. Umbilical Hernia of eight years standing; age of patient ten years; cure believed to be radical in five months.*

Feb. 24th, 1837. This little patient is stated by her mother to have laboured under a small umbilical hernia for eight years. She has been wearing CHASE's Umbilical Truss since the second of December last. No signs of the sac are visible on removing the instrument, but a hernial orifice at the umbilicus admits the tip of the little finger. There are no signs of irritation about the parts pressed upon. The hernia had been prevented from increasing before the use of the truss, by careful bandaging.

April 20th. The patient again examined. The child has been using violent exertion, and the margin of the block has bruised the surrounding skin a little. There is no trace of irritation, but some slight secondary hyperemia is visible. No trace of a hernial orifice can be discovered. The patient is judged by the chairman to be radically cured, but Dr. CHASE declines relinquishing the use of the truss for the present.

CASE XXIX.—*By the Chairman. Inguinal Hernia of two years standing; age of patient 13 years; Radical Cure by Chase's Inguinal Truss in six months.*

April 27th, 1837. This little boy was brought before the Chairman this day. The facts connected with the previous history of the case are taken from the account by the child: the dates are from Dr. CHASE's record.

About two years ago he fell from a tree, astride upon a fence. The accident was soon followed by hernia on the right side, which rapidly enlarged, and the intestine descended into the scrotum. Dr. CHASE states that the finger readily entered the abdominal canal. His Inguinal Truss was applied on the 12th of May, 1836. On the night of the 13th it was laid aside till morning. From the 14th of May till the 7th of November, it was worn constantly, by day and night. Since the last date it has been entirely abandoned.

The two external rings appear now similar in all respects. There have been no symptoms of weakness, and the parts acted upon by the instrument retain no trace of its former presence. This child serves as an errand boy. He is radically cured.

CASE XXX.—*By the Chairman. Congenital Umbilical Hernia; Chase's Umbilical Band applied at the age of two months; cure deemed radical in two months.*

April 28th, 1837. This little patient is now fifteen months old. Before

the age of two months, the usual care in preserving the bowels in place by the hand, by bandage and compresses, and by a belt and soft pad had been tried without obvious effect. The father states that the Umbilical Truss of Dr. CHASE was applied when the child was two months old, and was steadily continued for six weeks, or, at most, two months, since which the case has been left totally unprotected—not the slightest symptom of protrusion of the bowel has occurred.

There is a very slight degree of puffiness about the umbilicus in this case, as though the cicatrix had not yet acquired its greatest degree of firmness; but the accidents of childhood in a vigorous infant, from the age of four to that of fifteen months, are deemed sufficient proof that the cure is radical.

The following highly interesting case was furnished by HENRY BOND, M. D., in reply to a note from the Chairman of the Committee, requesting an account of the particulars.

CASE XXXI.—*Femoral Hernia; supposed sloughing of strangulated omentum; return of hernia after the cicatrization of the abscess.*

On the 9th of April, 1836, I was called to Mrs. M. Y. aged about thirty-four years, who complained of severe pain in the abdomen, and told me she had the cramp colic. I prescribed a full dose of laudanum and castor oil. A few hours after, I called and found that she had been vomiting, and was in no respect better. I was now informed by an attendant of a fact which the patient had refused to communicate, viz: that she had “a lump in her side.”

Upon examination, I found a femoral hernia of the left side, which was with much difficulty reduced by taxis. A truss was applied as soon as it could be procured. I visited her every day, for a short time, to ascertain that the hernia was retained.

On the 16th I was called to see her again, and found her in the same condition as on the 9th. Soon after my last visit the hernia returned while the truss was on, which she immediately removed. After repeated and persevering efforts, and many hours delay, it was again reduced, and the truss again applied.

On the 18th, about mid-day, it suddenly returned, when she was in the street, attended with such violent symptoms that she with difficulty reached her house, which was only at a short distance.

Within an hour I saw her, and again attempted to reduce the hernia, but without success. I attempted, immediately after this, to obtain a consultation, but each of the eminent surgeons to whom I applied was either absent or indispensably engaged. In the evening, two medical friends visited her with me, and reduction was again attempted without success. She was bled copiously; active purgative enemata were repeatedly administered, and, afterwards, opiate enemata. Cold was applied to the hernial tumour, and warm fomentations to the abdomen.

In the forenoon of the 19th, further attempts at reduction were made by myself and by the most competent surgical aid in the city. Vomiting and retching came on soon after the return of the hernia yesterday, and continued all night, accompanied with a pain which occasioned a constant groaning, and prevented sleep entirely until morning, when a short nap was procured by the strong opiate enemata. She has great thirst, and rejects eve-

ry thing swallowed. Pulse very frequent; tongue parched; great heat and tenderness in the abdomen; the tenderness being very great about the umbilicus, but extending over the whole cavity. The hernial tumour is tense and tender, but has less sensibility and pain than the abdomen.

She was told that her case was regarded as hopeless without an operation, and that this, in her case, would be attended with great danger. She promptly decided, as she had done before, that she would not consent to an operation. Attempts at reduction were now discontinued. She remained without any essential change or abatement in her symptoms until the night of the 21st.

On the morning of the 22nd, I found a great change in her condition. The vomiting had ceased, her thirst had abated, and her appetite had returned. The heat, pain, and tenderness in the abdomen, which were unabated yesterday, were now greatly diminished; her countenance has improved, and she has had a slight alvine evacuation. The hernial tumour continues undiminished in size, density and sensibility.

April 28th. She has had no return of the vomiting, nor of the heat, pain, and tenderness of the abdomen since the 22nd. The tumour has been increasing very considerably in size, and has been extremely tender, but without any considerable pain so long as the patient is at rest. She has had stools every day, but not without the use of purgatives. The appetite is variable. The patient has been down stairs repeatedly, but is unable to straighten the limb, owing to the tenderness about the top of the thigh. While the tumour has been increasing in size during the last few days, it has become rather softer, and its outline is less distinctly defined. During this day, she has experienced a sharp, burning pain, such as commonly occurs when an abscess is about to open spontaneously. About 9 o'clock, P. M., it burst and discharged a considerable quantity of dark and very fœtid matter.

On the 29th, the patient informed me that she had rested well: that this morning she pulled "a core" out of the opening, at least six inches long, and as large as her little finger: that it did not look like other cores, as it was very dark coloured and fœtid. I did not see it, but had no doubt, from her description, that it was a part of the omentum.

The discharge rapidly subsided, and the opening healed entirely within ten days. Some stiffness, and inability to produce complete extension of the limb remained a few days after the opening occurred. As soon as the discharge, and the sensibility of the part would admit of it, I applied a truss with a view of consolidating the parts and to insure the certainty of effecting a radical cure.

On the 10th of May, she was so well as to be about, attending to her ordinary laborious occupation. The truss was worn only a very few days, as I was told by some of my surgical friends that it was useless, *as, from the condition of the parts, there must necessarily be a radical cure without the application of a truss.*

July 3d. I was again called, and found that she had very great pain in the left groin, extending into the iliac region. She had nausea and obstruction of the first passages. There was a tumour in the groin, below Poupart's ligament, about the size of a marble. I made some attempts to reduce it, but without success, and had some doubts whether it was a hernia. I directed v. s. ℥xviii. copious purgative enemata, and afterwards a large

dose of castor oil. In a little time she was relieved of the pain and the tumour disappeared.

July 31st. The hernia returned yesterday, and was so painful as to prevent any sleep last night. I was called at 1, P. M. The tumour has become larger to-day and more painful, and she has been vomiting all the forenoon. She has had no stool since yesterday morning. The tumour is just below, and parallel with Poupart's ligament, and is about the size of the last joint of my thumb, firm, and painful on pressure. The patient complains of great pain in the abdomen, chiefly in and above the left iliac region. I directed a copious and active purgative enema to be followed by a cathartic draught; called again, in a short time, with a medical friend, and found her in no degree relieved; directed two dozen leeches to be applied to the tumour, and afterwards cold to be applied; ordered a strong purgative enema, and after that operated, a large dose of castor oil. After the use of these remedies she became a little easier. At a little past midnight she ceased vomiting, and had a stool.

August 1st. In the morning I found the tumour soft, and it was reduced without difficulty.

Since the last date, the hernia has reappeared several times in spite of the different trusses she has made use of. She has generally succeeded in returning it herself; but, on three occasions, it has been attended with the same distress and difficulty as on the 31st of July.

One chief reason why the trusses have not been more effectual is, that her occupation obliges her frequently to carry heavy burdens, and to pass up and down a very steep flight of steps.

NOTE.

During the engrossment and final reading of the above Report and Cases, Dr. ASHMEAD, the third member of the Committee, was prevented from attending its meetings by indisposition and absence from the city, and his name does not appear among the signatures.

R. C.

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Charleston, July 13th, 1837.

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Charleston, June 1, 1837.

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<i>Materia Medica and Pharmacy.</i>	By Dr. HARRISON.
<i>Theory and Practice of Medicine.</i>	By Dr. DRAKE.
<i>Dissections and Practical Anatomy.</i>	By Dr. TRIMBLE.

Clinical Instruction in the Cincinnati Hospital, by Drs. DRAKE, PARKER, and RIVES.

Professor Parker, now in Europe, for the purchase of additional books and apparatus, will return in October.

Dr. TRIMBLE will open the rooms for Practical Anatomy on the 1st of October, and Professor M'DOWELL will at the same time commence a preliminary course of Osteology.

Expenses.—Tickets of the Professors, \$15 each, Matriculation, \$2, Library ticket (optional) \$3, Hospital ticket, \$5, Anatomical Rooms, \$10—Total, \$125. Respectable boarding and lodging can be had at \$3 a week.

As we have no national circulating medium, the Faculty consider it proper to give notice, that they will receive from students, at par, the current bank bills of the different States in which they respectively reside.

By order of the Faculty.

J. B. ROGERS, *Dean.*

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This is one of the most interesting publications which has for a long time past issued from the press, and will prove, if we judge from the specimen now given, a valuable accession to the literature of the day. The subject is indeed one of great interest, as a memorial of the genius, acquirements, and still more of the domestic habits and general dispositions of one of the most illustrious literary characters of this or of any other age; but it derives additional interest from the manner in which it is treated—from the talent, the taste, and sound judgment displayed by the editor, Mr. Lockhart. The volume contains a memoir left by Sir Walter Scott of his own life, from his earliest recollections, which is marked throughout by modesty, sobriety, and good sense, and by that easy vein of humour and pleasantry, which seems to have been the habitual temper of his mind, and which imparted a peculiar lightness and grace to his narratives even of the most common incidents. Mr. Lockhart has engrafted his account on this brief memoir, filling up details, adding such farther illustrations and anecdotes as serve to throw light on the original sketch; with extracts from Sir Walter's letters, giving his own account of his occupations and pursuits. All these various materials Mr. Lockhart has arranged into a well-digested narrative, which acquires additional interest from his own judicious remarks, and often graphical views both of character and manners. The work is of great value, as giving such full details of the infancy and boyish days of Sir Walter Scott—of the course of his studies—of his habits, and the progress and maturity of his mind; and though last, not least, of that enviable equanimity and serenity of temper which he possessed,—those benevolent dispositions, and that blameless conduct in all the relations of life, which gave so fine a finish of his character; and is so different from others, in behalf of whose genius a sort of dispensation is claimed by their admirers from all ordinary rules, even that of morality itself. Besides the account of Sir Walter Scott, the work contains an interesting portion of cotemporary history, much amusing anecdote, and lively illustration of the national character. To the taste and judgment, with which the editor has made his selections, the work

is indebted for much of its interest; if he has erred on any side, it is certainly not on that of prolixity, either in his extracts from letters or in his own remarks, which are always to the purpose, illustrative of some essential point, and tending either to information or amusement.—*Courant*.

There has not been, we will venture to say, a work published the last quarter of a century—perhaps we might with all safety double the period—which has been looked for with a more general, more eager, and more intense curiosity, than that whose title stands at the head of this notice. A feeling of impatience for its appearance, and of deep interest by anticipation in its contents, pervaded all classes from the peer to the peasant, and, we have no doubt, the feeling is, or was, as universal as the fame of its illustrious subject—that it was not confined alone to those countries in which the language in which he wrote is spoken, but existed in equal fervour throughout the length and breadth of many a foreign land.

All felt, too, that Mr. Lockhart was the natural, as he now appears to be the legal literary executor; and, it will be no great absurdity to add, legal biographer of Sir Walter Scott. All felt that he was by far the most likely person, both by relationship and talent, to do the fullest justice to a life of his illustrious relative.

With regard to the execution of the work, we shall only say,—and we could not say more in effect although we were to write half a dozen columns on the subject—that it is in every respect, calculated to gratify all reasonable curiosity, and to satisfy all reasonable expectations, and this most amply. The narrative is clear and unaffected, and, with great good taste and judgment on the part of the writer, aims at presenting little more than a simple record of facts, pleasingly told, but without the slightest effort after effect, or attempt at meretricious embellishment. Above all things, let us remark its total freedom from that fulsome, and no less impertinent than fulsome, laudation of the merits and genius of the subject, with which it is a common failing of the writers of memoirs to lard over their narratives; thus becoming rather the eulogists than biographers of those whose lives they record. From this sin the work before us is entirely free.—*Scotsman*.

The life of Sir Walter Scott, written by his son-in-law, and literary executor, Mr. Lockhart, must needs be a work of surpassing interest. It is in every respect calculated to gratify the admirers of Sir Walter Scott, and to realise all the expectations which they may have formed with respect to the peculiar qualifications of the biographer. The details are minute, copious, and characteristic. Every incident, adventure, or saying, connected with Scott, in any way calculated to exhibit *the man*, is brought forward and related in a manner the most attractive. Mr. Lockhart displays that admirable tact so indispensable in a biographer, which enables him to go along with his subject, *con amore*, in every situation, and under every variety of circumstance. This utter absence of pretension, indeed, forms one of the greatest charms of the work.—*Evening Post*.

This is the first volume of the long promised life of Sir Walter Scott.—Few books have made their appearance in the world better adapted to obtain favourable notice from it. Every one is willing to hear about Sir Walter Scott; and Mr. Lockhart has provided,—in the memoirs which he gives of the poet's early life, and the notices and anecdotes which he everywhere scatters with the most liberal hand,—entertainment which will more than satisfy all expectation.—*Bristol Mercury*.

We opened this volume with great interest and anxiety, but not unmingled with fear as to the result. So many disclosures have been made by Sir Walter Scott himself in his latter days; and such a variety of information on almost every point bearing upon his history, literary and personal, has appeared since in different forms and shapes, that we conceived Mr. Lockhart would have little now to impart to the public. This, however, is far from being the case. The present volume has all the freshness of novelty, and is so full of *heart*, of life, and adventures, that it stirs up almost like one of those romances with which the Great Magician himself, in days, alas! never to return, held captive his countless readers.—*Inverness Courier*.

